



**CENTER FOR WOMEN'S  
HEALTH RESEARCH**  
University of Wisconsin-Madison

**Statement as Expert in case of Bala vs. OHSU, June 29, 2021**

**Submitted by:**

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I have been asked to provide my opinion as an expert on the following two questions:

1. Whether the evidence of Dr. Bala's treatment in this case is consistent with the operation of sex and/or race discrimination against female physicians of color in the academic hospital setting based upon the scientifically accepted literature in my field of expertise; and,
2. Whether OHSU's leadership, managers and supervisors failed to take reasonable actions to stop any sexual or racial bias against Dr. Bala based upon the scientifically accepted literature in my field of expertise.

In my opinion, based on the evidence I reviewed, there is no doubt that Dr. Bala endured relentless sex and race discrimination due to her status as a woman physician of Asian-Indian descent in ways that are supported by a large body of experimental research and that have been well documented to occur within academic medicine. In addition, based on the evidence I reviewed, it is my opinion that the leaders at OHSU should have been well aware that they were placing Dr. Bala in a situation in which she was vulnerable to sex and race discrimination, but did little if anything to protect her from such discrimination and little to intervene when she became the target of such discrimination. The basis for these opinions are set forth in the balance of my report.

I will review my credentials as an expert and have attached my CV which includes all my publications on the topic of race and gender bias with a focus on academic medicine. Although in 2019, I was asked to review a case of discrimination against a woman physician of color in academic medicine and write an expert opinion of the role of implicit bias, I have never been deposed or testified in a trial.

My opinion is based on review of all the documents sent to me by the law firm representing Dr. Bala and included pdf copies of multiple emails, depositions, text messages, and hand-written notes. The list of the documents sent to me is provided by the law firm.

**I. My credentials as an expert on gender and race bias in academic medicine and in particular how gender stereotypes can lead the same behavior, work, or performance to be evaluated positively when enacted by a man and negatively when enacted by a woman.**

I am a physician-scientist and tenured professor at the University of Wisconsin-Madison (UW-Madison). I am an internist and have held or currently hold several leadership positions. These include former Vice Chair for Faculty Development in the Department of Medicine with over 300 faculty (2005-2009), and current and founding Director of both the Center for Women's Health Research and the Women in Science and Engineering Leadership Institute (WISELI). I have been funded by the National Institutes of Health and the National Science Foundation for over 20 years to study how to increase the participation and advancement of women in Science, Technology, Engineering, Mathematics, and Medicine (STEMM). Much of my work has focused on how deeply embedded cultural stereotypes give rise to so called "implicit bias" that works in multiple ways to impede the career advancement of women and ethnic/racial

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minority groups. I was the principal investigator (PI) of a 5-year NSF ADVANCE Institutional Transformation Award (one of 9 PIs awarded nationally in the first year these were offered, and the only physician ever to receive one of these awards). With this award the co-PI, Jo Handelsman, and I established WISELI at UW-Madison in the College of Engineering in 2002. It is worth noting that Jo Handelsman went on to be President Obama's Science Advisor in the Office of Science and Technology Policy. WISELI continues to be recognized at UW-Madison and nationally as a leader in this realm of action research, extending our work beyond its initial focus on gender to include the impact of implicit biases that emanate from the existence of other group stereotypes including racial stereotypes and the intersection of race and gender stereotypes.

I was also the PI of an NIH Director's Pathfinder Award (2010-2013) to support research to increase the ethnic and racial diversity of the STEMM workforce. I was one of only 7 people to receive this award. I have been PI of several other NIH awards to support research in this area including a very competitive NIH Director's Transformative R01 (2013-2018). Treating implicit bias as a potentially remediable habit, I led the first randomized controlled study in a real world setting of an intervention to help STEMM faculty "break the bias habit" (M. Carnes, Devine, et al., 2015; P. G. Devine et al., 2017a). The success of this workshop in promoting bias-reducing behaviors, improving department climate, and increasing the diversity of new faculty hires at UW-Madison led to my current work which is an NIH-funded cluster randomized study of 19 departments of medicine in the U.S. This study, called the Bias Reduction in Internal Medicine (BRIM) study, will be completed in 2022.

My work has been recognized with a number of awards. Most recently, in 2019, I received a WARF Named Professorship, one of the most distinguished awards given to a faculty member at UW-Madison for their research; and in 2021, I received the Distinguished Educator Award from the Association for Clinical and Translational Science. I have served two terms on different NIH Advisory Councils and have been invited to present my research to the National Academies of Science, the NIH, the American Association for the Advancement of Science (AAAS), and the Association of Professors of Medicine. I have published over 150 papers in peer reviewed scientific journals and been invited to write commentaries regarding implicit bias and academic career development for JAMA, the Annals of Internal Medicine, Academic Medicine, the Journal of Hospital Medicine, and Circulation.

Specifically related to academic medicine, I was one of the first investigators to examine how gender influences the experiences of internal medicine residents in directing patient care (Bartels, Goetz, Ward, & Carnes, 2008) and in leading cardiopulmonary resuscitative events (codes) (Kolehmainen, Brennan, Filut, Isaac, & Carnes, 2014). Both studies found that women acknowledge experiencing social penalties if they communicate in the same directive manner as their male colleagues. With two of my trainees I conducted a systematic review of all published research papers examining the experiences of physicians of color practicing in the U.S. We identified 19 studies. Survey studies confirmed the high prevalence of discrimination toward physicians of color, particularly women, and qualitative studies were replete with personal anecdotes of subtle and overt discrimination (Filut, Alvarez, & Carnes, 2020).

In summary, I feel well qualified to offer evidence-based comment on why the exact same behaviors and communication style that would go unnoticed or might even be valued as evidence of effective leadership in a male electrophysiology (EP) cardiologist would be criticized for being "aggressive", "abrasive", or "unprofessional" in a female cardiologist – particularly a woman of color. I will first note that multiple studies conducted over the past 30 years have documented discrimination against women physicians in academic medicine, to make the case that leaders at OHSU have no excuse for being unaware of the challenges Dr. Bala would face as a woman of color being placed in a leadership role with the express purpose of developing a new program intended to challenge the status quo in a male dominated domain within cardiology and at OHSU. Then I will more specifically show how what happened to Dr. Bala is exactly what would be predicted from an enormous body of research on gender and leadership that consistently finds society has an aversion to women in power – particularly when women are leading in a predominantly male workforce such as EP cardiology where less than 7% of the workforce is female. Much of this research has rigorous, experimental designs where the differences in evaluation of a male and female employee can only be attributed to their difference in gender. Some of this research even involved male and female actors scripted to enact the exact same leadership behavior with the consistent

finding that women leaders receive more negative criticism and invoke more negative emotions than men for the exact same behaviors. I will also review some of the recent research that find nurses frequently do not show female physicians the same kind of respect and deference to their idiosyncrasies that they show male physicians. This research is highly relevant since some of the complaints about Dr. Bala originated with nurses. To ward off the conclusion that if everyone exhibits such gender bias against women leaders, then there was nothing Dr. Bala's supervisors or co-workers could do to avoid such bias, I note that within the field of cardiology there have been 3 waves of the American College of Cardiology Professional Life Survey since 1998, all documenting discrimination against women cardiologists with recommendations after each wave to acknowledge and reduce widespread gender bias within cardiology and improve the working environment for women cardiologists.

## **II. Research confirms that women physicians and particularly women physicians of color experience discrimination in the workplace**

Data collected annually by the Association of American Medical Colleges (AAMC) find that women (mostly White women) have comprised approximately half of medical students for over 20 years. However, numerous studies and reports find that compared to their comparably performing male counterparts, women physicians remained underrepresented in leadership positions in academic medicine, receive lower pay after adjusting for all conceivable confounders, are less likely to have their NIH grants renewed, and less likely to have their manuscripts recommended for publication in peer reviewed journals (Butkus et al., 2018; M. Carnes, 2018; M. Carnes & Bairey Merz, 2017; M. Carnes, Bartels, Kaatz, & Kolehmainen, 2015; P. L. Carr, Gunn, Kaplan, Raj, & Freund, 2015; P. L. Carr et al., 2018; Kaatz, Gutierrez, & Carnes, 2014; Magua et al., 2017; Richter et al., 2020). The proportion of individuals from ethnic and racial minority groups historically marginalized in the U.S. (Blacks, Hispanics, Native Americans and Alaskan Natives, and Native Hawaiians and Pacific Islanders) are underrepresented at all stages of careers in academic science and medicine (i.e., less than 20% vs. 36% of the U.S. population)(Nivet & Castillo-Page, 2016). Although Asians are well represented in medical school and on the faculty of U.S. medical schools relative to their proportion of the U.S. population, AAMC data shows that the percentage of Asians falls disproportionately at sequential promotion levels toward leadership.

Multiple studies document that women and physicians of color (including historically marginalized ethnic/ethnic groups and Asian physicians) practicing in the U.S report to a far greater extent than their White counterparts experiencing hostile work environments, multiple episodes of both microaggressions (unintended slights), and overt discrimination in the workplace (Filut et al., 2020; Mahoney, Wilson, Odom, Flowers, & Adler, 2008; Montenegro, 2016; Marcella Nunez-Smith, Curry, Berg, Krumholz, & Bradley, 2008; M. Nunez-Smith et al., 2007; M. Nunez-Smith et al., 2009; O'Brien, McAbee, Hebl, & Rodgers, 2016; Peterson, Friedman, Ash, Franco, & Carr, 2004; L. Pololi, Cooper, Carr, & Cooper, 2010; Linda H. Pololi et al., 2013; Price et al., 2005; Sheridan et al., 2017; Sullivan Commission on Diversity in the Healthcare Workforce, 2004; Sullivan & Suez Mittman, 2010). In reviewing a large body of research from multiple disciplines, the National Academies of Sciences, the NIH, the NSF and others have concluded that cultural stereotypes are a root cause of the perpetuation of gender inequities in STEMM in the U.S.(National Academies of Sciences & Medicine, 2020; National Academy of Sciences National Academy of Engineering Institute of Medicine of the National Academies, 2006).

Dr. Bala was recruited to OHSU at a time when the vulnerability of academic medicine to gender bias was well known and recommendations to prevent and address it should have been put in place by OHSU leaders at all levels: dean, chair of the department of medicine, division chief of cardiology, and chief of electrophysiology. As noted above, the medical literature is replete with studies that have documented gender bias for several decades. For example, in 2003 Carr et al. published an analysis of in depth interviews with 18 women physician faculty in academic medicine and found gender discrimination was ranked first out of 11 possible choices for hindering their careers in academic medicine. Of note, one of the first surveys of women physicians to document gender bias was the American College of Cardiology Professional Life Survey conducted in 1996 (Limacher et al., 1998). This survey has been repeated twice since and each time the results were published in the *Journal of the American College of Cardiology*, one of the most widely read journals in the field of cardiology (Lewis et al., 2017; Poppas et al., 2009). In all

surveys, female cardiologists reported more discrimination than their male counterparts. In the most recent survey, 65% of the women reported experiencing discrimination, three times the rate of men. This rate is also higher than the 30% of women physicians (vs. 4% of men) who report experiencing discrimination in other areas of medicine (Jagsi et al., 2016).

Research on human behavior shows that discrimination toward an individual or group is encouraged when they are cast as a member of an “out group” (Brewer, 1979). This type of in-group favoritism and out-group discrimination is easy to establish (Kaatz & Carnes, 2014). Relevant to gender bias in medicine, Pingleton et al. interviewed 26 senior women faculty (i.e. full professors) in a department of internal medicine (like Dr. Bala) who collectively described an “undercurrent of bias” in their workplace and in particular described being subjected to the social process of “othering” where a person is perceived as “not one of us” (Pingleton, Jones, Rosolowski, & Zimmerman, 2016). Carr’s earlier interview study also documented this phenomenon as did Pololi and colleagues who found this feeling of not belonging in interviews with women physicians and a national survey of male and female physicians. (P. L. Carr, Szalacha L, Barnett R, Caswell C, Inui T, 2003; L. H. Pololi, Civian, Brennan, Dottolo, & Krupat, 2013; L. H. Pololi & Jones, 2010). Dr. Bala was recruited because of her exceptional training and expertise in an area that was currently in need of development at OHSU (high risk EP cardiac ablation). Counterintuitively, her own far greater knowledge and expertise in EP than her male colleagues probably contributed to othering her. Although not in medicine, an experimental study demonstrated how a woman’s expertise can be used to side line her when it means her opinions differ from those of others in a group – particularly men – even when others in the group do not have her level of expertise (Thomas-Hunt & Phillips, 2004). In other words, the fact that a woman’s opinions differed from other members of the group was construed as providing evidence that she didn’t know what she was talking about and could be ignored—even though she was the expert and was factually correct. Indeed, male team members with no expertise were more likely to be considered an expert and had more influence on group outcome than expert women (Thomas-Hunt & Phillips, 2004).

Relevance to Bala case. Although Dr. Bala is not a member of a historically underrepresented ethnic/racial group, AAMC data show that relative to their proportion of the medical school population, Asian physicians are less likely than their White counterparts to attain leadership positions. In our systematic review, we found several studies confirming that Asian physicians – particularly Asian women – report discrimination in workplace (Bhatt, 2013; Filut et al., 2020; Murti, 2012). As a brown woman, there would be automatic visual triggers that Dr. Bala was a member of the “out group.” On top of that, Dr. Bala came from another (higher ranked) EP program on the East Coast – all aspects of her social identity that could be used to cast her as “not one of us” by colleagues and co-workers at OHSU. In addition, as the *de facto* expert on high-risk EP ablations, her opinions differed from the prevailing practices and opinions held by men. As in the study described above, it would be easy for other members of the team to use these differences as affirmation that she was not qualified for her leadership position rather than as evidence that she is the expert in caring for patients in her field and in designing a system of care to optimize the care of these patients. Dr. Bala compares her experience at OHSU with that at the 3 other hospitals in which she has worked in an email to Linda Strahm, Director of HR, and notes that she has never before experienced the level of sexism or the inability to care for patients because of it that she has found at OHSU.

Rather than piling on to exclude Dr. Bala (to the extent of not inviting her to recruitment dinners!), Drs. Henrikson, Cigarroa, and Kaul should all have publicly and repeatedly emphasized her expertise and stressed how fortunate OHSU was to recruit someone with her level of mastery of complex procedures and caliber of training. However, rather than affirm common identity messages to convey that she was a member of the “in group” (e.g., “we are all members of the OHSU EP team” “we are all here to work together as a team to provide safe and excellent patient care”) and work with her to improve the care of EP patients, they chose not to counteract and indeed contributed abundantly to messages reinforcing that Dr. Bala was a member of an “out group,” that her practices did not emanate from her expertise (but from just being difficult), and that she did not have to be treated with the respect that her position entitled her to. Some specific examples in which Dr. Bala was excluded and her expertise devalued:

1. Rather than applaud Dr. Bala’s suggestions for processes to improve patient care of complex ablation patients (an area in which she is clearly the recognized expert), Dr. Henrikson



undermined her in multiple ways including texting with EP staff about Dr. Bala. This was certainly breaching the usual chain of command in an academic medical center.

2. Undermining Dr. Bala's authority as director of high-risk EP ablation, Dr. Henrikson communicated around Dr. Bala, directly with Ms. Workman, Manager of Cardiac Cath Laboratory, on May 8, 2015 saying "Yup, rupa has lots of ideas, some good, some not so much."
3. In this same email, even though Dr. Bala is the expert on procedures for complex EP ablations, Dr. Henrikson directly countermands her requests to not have "Cath lab staff to drape EP patients" and to train a designated "EP team unto themselves, separate from Cath."
4. Excluding Dr. Bala from recruitment dinners.
5. An email to his Clinical Chief, Dr. Ciguarra, in which Dr. Sanjiv Kaul, Chief of Cardiovascular Medicine, rightly stating: "It almost appears that everyone is ganging up on her."
6. An email from Dr. Kirsch (chair of Anesthesiology) Nov 12, 2015 to Dr. Ciguarra saying that Dr. Bala "had another melt down today." These terms are quite pejorative and more likely to be used to negatively frame behavior from a woman than a man.
7. In a very professional email to a junior faculty member, Dr. Jonathan Davis on 12/26/2016, Dr. Bala informed him that she overheard him making fun of her in front of nurses and cardiology fellows in an open area (the nurses station). Had she not confronted him, he would likely never have issued the apology that he subsequently did. The irony is that it was Dr. Bala who was consistently being accused of being unprofessional while her colleagues and co-workers felt free to engage in this kind of blatantly unprofessional behavior.

### **III. Cultural stereotypes are widely known and filter the way we view and interpret the behavior of others.**

Because we are bombarded with and absorb messages about different groups of people (i.e. social categories) throughout our lives, everyone who lives in this society knows the content of gender and race stereotypes – even if they do not consciously endorse them. This was first shown in 1989 when Devine demonstrated that even individuals who denounced racial bias were still able to describe cultural stereotypes about Blacks (Patricia G. Devine, 1989). More recently this was demonstrated in a study with a diverse group of over 600 participants (Ghavami, 2013 ) in a study from researchers at UCLA. They asked participants to describe not what they personally believed but what stereotypes about different racial and ethnic groups they had seen portrayed around them. Participants were able to generate familiar gender stereotypes and stereotypes about a number of racial and ethnic groups including Asian women. Multiple researchers have demonstrated that simply knowing stereotypes about any group unwittingly distorts perceptions of an individual from that group such that even the exact same behavior or performance is interpreted differently when enacted by a member of one group vs. another. For example, Donald Rubin, a linguist who studied accented English, found that when his students listened to a pre-recorded Standard American English speaker reading a brief pre-recorded passage, they reported hearing more accented English when the picture they were shown of the presumed speaker was an Asian woman compared to the students who saw a picture of a White woman (Kang & Rubin, 2009; Rubin, 1992). In another example, Claudia Golden, a Professor of Economics at Harvard, found that judges at orchestra tryouts reported that the music played by women actually sounded different than music played by men until the identity of the musicians was masked with a screen, markedly increasing the number of women selected to play in symphony orchestras (Goldin, 2000). Monica Biernat, a Professor at the University of Kansas has shown that when people are shown photographs of a man or woman standing next to a standard object such as a desk or door frame and asked to estimate their height, people provide a greater height in feet and inches for the man than the women when in reality they are the exact same height. Finally, our research team reviewed all randomized controlled experiments in hiring settings where participants were presented with identical applications differing only by gender and found 26 studies with a preference for hiring, interviewing and paying higher salaries to the male applicant – especially for occupations in fields where men predominate (male-typed) or high status positions (Isaac, Lee, & Carnes, 2009).

Relevance to Bala case. Dr. Bala's behavior is repeatedly viewed and interpreted differently than the same behavior from her male colleagues. Some specific examples:

1. Dr. Bala was harshly criticized for requesting that staff in the EP procedure room not engage in social chatter while she was trying to concentrate on a difficult procedure. She notes in an email to Linda Strahm, Director of HR, that "when the male attendings...are in the lab, Matt and the cath lab staff are not talking. They are being respectful of the attending doing the case. When the male attendings ask the techs to stop talking, they stop talking and do not talk back to the attending and file complaints."
2. In an email to Dr. Kirsch (former chair of Anesthesia), Nov 13, 2015 a resident in anesthesia writes: "as is typical for her, she enters the room, and begins giving instructions to her scrub tech and device tech in a very rude, condescending tone." It is very likely that he construed this tone because it was Dr. Bala speaking and just as likely that he would not have construed this tone if a male EP cardiologist had entered the room and (very appropriately) began to direct the team to prepare for a procedure for which they were the responsible physician. He later writes that Dr. Bala "shouted" at him to call out blood pressures every minute. He goes on give more negative descriptions of Dr. Bala – emphasizing her communication style.
3. In the letter to Dr. Cigarroa (Clinical Chief of Cardiology) from Tuan Mai, an EP fellow, of Sept 18, 2015: He has apparently been told about an interaction between Dr. Bala and a Cardiology Fellow and asked about his interactions. He proceeds to cast a perfectly reasonable interaction with Dr. Bala in a negative light. He wanted her to staff his "device interrogations" on EP patients conducted during the night and approached her while she was preparing for an EP case. He was put off that she said "she needed to focus on her case." Remembering that she does "complex EP ablations" this seems perfectly reasonable. In fact, recognizing that this is a systems issue rather than an individual failing, Dr. Bala recommended that there be an attending assigned to cover EP consults – something that would have permanently solved this problem rather than enable people to see this as a problem with Dr. Bala refusing to staff consults at a time that might have jeopardized her ability to focus on a difficult upcoming procedure. (It is noteworthy that although Chuck uses this information from the EP fellow against her, in an email four months later on 1/23/16, Chuck indicates to Rupa that "I would like to experiment with having an EP attending of the week in charge of consults, as you have advocated for.")

**IV. Women in leadership roles in predominantly male fields are evaluated negatively for identical behaviors that go unnoticed or receive praise for effective leadership in men.**

Multiple studies over several decades affirm that cultural stereotypes about men contain traits and behaviors that have been labeled "agentic" by Alice Eagly, an experimental social psychologist on the faculty at Northwestern University, in that it is assumed they require individual human agency and tend to be action oriented. They align with occupations or roles assumed to require physical or intellectual strength and include being decisive, assertive, independent, powerful, and technically skilled. Cultural stereotypes about women have been labeled "communal" and include being gentle, good with relationships, dependent, warm, and modest (A. H. Eagly, Karau SJ, 2002; Ellemers, 2018; Haines, Deaux, & Lofaro, 2016; Rudman, Moss-Racusin, Phelan, & Nauts, 2012).

Although gender does not exist as a simple binary but along a much more nuanced continuum, living in this society makes us all aware of stereotypes about men and women. Just knowing these group stereotypes causes implicit assumptions about individual men and women and how good a "fit" they are for certain roles – again, even if at a conscious level we do not endorse them. For example, a well-known sorting task developed by Greenwald and colleagues called the Implicit Association Test (IAT) asks people to view words and pictures on a computer screen that either align with or do not align with cultural stereotypes and sort them as quickly as possible by pressing computer keys. (Greenwald, McGhee, &

Schwartz, 1998). The vast majority of people who take these tests more quickly pair the stereotype congruent than the stereotype incongruent words or pictures – basically illustrating that knowing these stereotypes creates stronger associations between certain traits or behaviors with some groups and weaker associations between these traits or behaviors and other groups. As an illustration, we asked faculty at the University of Wisconsin to take an IAT that shows a list of male (e.g., Ian) or female (e.g., Emily) gendered names and a list of words associated with leader (e.g., assertive) or supporter (e.g., helpful)(Dasgupta, 2004). Over 600 faculty took this test and over 70% of both male and female faculty more quickly sorted the male-gendered names with the leader words and the female-gendered names with supporter words.(Filut A, 2017) This is in spite of the fact that we have many effective and popular women leaders at UW-Madison including our Chancellor and at the time of our study the Provost as well. I have been studying women and leadership for years and have been a woman leader for years, and I consistently show a pro-male leadership bias on this test. Research shows that we are generally unaware of these implicit biases but that they can influence the way we process information, interact with and judge people, respond emotionally to another person's behavior, and make decisions.

These stereotypes are so well engrained in our patterns of thinking that they lead to implicit assumptions about how men and women “should” behave (that is, in alignment with male- and female-gender stereotypes, respectively) – these have been called *prescriptive* gender norms. These stereotypes also lead us to implicitly judge how men and women “should not” behave – again, even if we consciously disavow these beliefs. These have been called *proscriptive* gender norms. Laurie Rudman, a professor at Rutgers University, notes that taken together these prescriptive and proscriptive norms create “gender rules.” When men or women break these gender rules, they suffer social penalties. We know this, if for no other reason, than the fact that we have words in the English language to describe men and women who violate gender norms for behavior. For men who break these rules, we have unflattering terms like “wimpy” or “sissy” and for women who break these rules, we have unflattering terms like “bossy” or “domineering.” Rudman’s group has found that prescriptive traits and behaviors for men include “leadership ability” “aggressive” “assertive” “competitive” and “competent” and for women include “warm” “cheerful” “friendly” “humble” and “likeable”. Important to the Bala case are that the proscriptions for women but not men include being “dominating” “demanding” and “controlling”(Rudman et al., 2012). Thus, women perceived as behaving in these ways would be breaking gender rules and invoke negative responses.

Nonverbal behaviors have been used for decades in experimental psychology to assess these implicit stereotype-based cognitive processes including documenting the aversion to women leaders. This was demonstrated in a study first performed by Butler and Geis at the University of Delaware in 1990 (Butler & Geis, 1990) and replicated and extended by Sabine Koch at the University of Heidelberg (Koch, 2005). In this study, male and female actors were scripted to enact the role of leader in a small group charged with a problem-solving task. Individuals unaware of the purpose of the study coded the non-verbal reactions to the leaders. In both studies, nonverbal responses from other team members showed more displeasure including more grimacing, head shaking, and frowning when a woman was the team leader. The exact same behavior from a male leader evoked more positive nonverbal responses including head nodding and smiling. The small group functioning in the EP suite with Dr. Bala as leader of the team essentially replicates this study.

Once the workforce in any occupation is over 75% male or female, the occupation itself becomes “male-typed” or “female-typed.” That means that stereotypes about the field itself and assumption about what it takes to succeed in a field become aligned with gender stereotypes. This then becomes a self-fulfilling prophesy in that the implicit lack of fit for women in male-typed fields discourages the entry of women, women who do enter these fields are more likely to fail because they work in a hostile exclusionary environment, and their failure is then used to justify their exclusion (Cejka, 1999; Glick, Wilk, & Perreault, 1995). Within internal medicine, this congruity between gender stereotypes and stereotypes about various specialties/subspecialties almost certainly contributes to the dramatic occupational sex segregation that exists. For example, physicians in general internal medicine and geriatrics which are assumed to require relational and interpersonal skills (and are of lower status and receive lower pay) are over 50% women whereas interventional cardiology and EP cardiology which are assumed to require highly technical skills

(and are highly prestigious and receive the highest pay of all internal medicine subspecialties) are 10% and 7% women, respectively.

Madeline Heilman, a Professor at NYU, has shown in multiple experimental studies conducted over decades that unlike identically credentialed men, highly successful women in male-typed roles are viewed as “interpersonally hostile”, “difficult to work with” and “unlikeable”(Madeline E. Heilman & Okimoto, 2007; M. E. Heilman, Wallen, Fuchs, & Tamkins, 2004). Her work shows that this personal derogation occurs only when women are successful in a male-typed role (such as director of complex EP ablation in the Bala case rather than, for example, in nursing). Importantly, Heilman showed that competence and likeability independently predicted recommendations for promotion, salary level, and retention with the company. On all measures, both male and female employees deemed likable were evaluated more favorably than those evaluated as unlikeable, but only women were deemed unlikeable for being competent at their job (M. E. Heilman et al., 2004).

When women violate “gender rules” such as by giving orders (as required by a physician leading a clinical care team during complex EP ablation procedures) they suffer social penalties in a number of ways including performance evaluations and promotions (Madeline E. Heilman, 2012). They may also endure what has been referred to as “gender policing” which means that women are admonished for behaving in gender incongruent ways and encouraged to adopt more gender-congruent ways of behaving. Shelley Correll, a Professor of Sociology at Stanford, examined a sample of performance evaluations of employees in a tech company (80 women and 128 men)(male-typed industry)(Correll, Weisshaar, Wynn, & Wehner, 2020). Examples of gender policing were particularly apparent in descriptions of communication style and personality. Ten percent of all women’s evaluations mentioned that the employee was too aggressive in her communication style compared to only 3.9 percent of men’s evaluations. In contrast, male employees being gender policed were more likely to receive feedback that they had too soft of a communication style. In a quote that could have come right out of Dr. Bala’s case an evaluation of a female employee states “Her speaking style and approach can be off-putting...She sometimes communicates in a way that is condescending or belittling to others.”

Remembering how stereotypes filter what is observed and how it is evaluated, the same communication style in men is likely to go unnoticed but be negatively evaluated or give rise to gender policing in women. This explains why “abrasive” is a term rarely used in performance evaluations of men but frequently in the evaluation of women – including of Dr. Bala. Kieran Snyder, CEO and Co-Founder of Textio and a linguist, looked at 248 performance reviews from 105 men and 75 women from 28 different tech companies. Words like “bossy”, “abrasive” “strident” and “aggressive” were found frequently in the performance reviews of women and almost never in those of men. In fact “abrasive” alone was used 17 times to describe 13 different women (Snyder, 2014).

As illustrated in Figure 1, when a male physician’s behavior is filtered through positive male stereotypes about leadership ability it simply reinforces that he is engaging in effective leadership. Indeed, directive leadership has been found to be most effective in many high risk, task-oriented clinical situations (Ford et al., 2016). However, when a female physician engages in the same behavior it is filtered through a different set of stereotypes with the resulting gender role violation interpreted as being demanding, unprofessional, abrasive or abusive. This distortion is apparent, for example, when in his deposition Dr. Henrikson disparages Dr. Bala’s persistent attempts to make systems changes in the EP ablation program for patient safety and program efficiency as her making “complaints” rather than showing “leadership.” “Complaining” and related terms like “whining” and “nagging” are gendered insults usually leveled at women rather than at men where similar behavior might be described as “innovating” or “being a champion for change” (Elmore & Luna-Lucero, 2017; Larris, 2012; Proudfoot, Kay, & Koval, 2015). It is notable, that in spite of his dismissal of Dr. Bala’s recommendations for improving the EP ablation program as “complaints,” in his summary of the practice changes to be implemented following an EP retreat (email of Nov 22, 2015), most of the changes are attributed to Dr. Bala’s recommendations.

Another relevant stereotype-related phenomenon regarding interpretation of an individual’s behavior is whether that behavior invokes what is referred to as “situational attribution” in which something in the surrounding circumstances is blamed for the behavior or “dispositional attribution” in which the behavior is



blamed on the individual's character. If there is a situation in which a male physician's communication is unduly abrupt, because this behavior aligns with the male-gendered stereotype of leader, situational attribution is likely to occur (e.g., "it was a difficult case" or even "he was having a bad day"). The same behavior in a female physician, because it violates female-gendered stereotypes, is likely to be generalized beyond a single instance to some character flaw (e.g., "she is a bully" or "she is rude"). Multiple instances of dispositional attribution aimed at Dr. Bala occur throughout the documents I reviewed; for example, when she is described as a bully and in the way her repeated attempts to improve inadequacies in OHSU's EP program were described as an "inability to accept and reflect on ...feedback" (summary notes from EP discussion Oct 7, 2015.) In another example, when she failed to respond to a greeting from EP staff because she had earphones covering her ears, rather than acknowledging the situation as the obvious cause, Dr. Bala was criticized for not being friendly. It is difficult to envision this rising to the level it did if a male EP cardiologist failed to respond to a greeting because he was wearing ear phones.

In the study from UCLA mentioned above examining the content of group stereotypes, Asian women were stereotyped as being "foreign", "shy", "quiet" and "submissive" (Ghavami, 2013 ). Thus, even more than white women, when Dr. Bala enacted leadership with a directive style that would be completely accepted and valued in a white man, she would have been particularly vulnerable to negative reactions (A. H. Eagly, Karau SJ, 2002; A. H. Eagly, Makhijani, M.G., Klonsky, B.G., 1992; Madeline E. Heilman, 2012; M. E. Heilman et al., 2004; Rudman et al., 2012). This is borne out in the experiences of Asian-Indian women physicians in the research described below.

Relevance to Bala case. Being the most technically demanding, highest paid, and prestigious subspecialty within cardiology with the lowest percentage of women among all internal medicine subspecialties, assumptions about EP cardiologists would be predicted to be strongly male-typed. Therefore, Dr. Bala – a woman and a woman of color in an extraordinarily white and male profession – will be viewed as not fitting regardless of her behavior. It is said that women face a double bind in such situations, because if they behave in ways consistent with female gender stereotypes (e.g., warm, subservient, quiet) they risk being seen as incompetent but if their job forces them to enact behaviors consistent with male gender stereotypes (e.g., assertive, loud, directive) they risk being criticized, evaluated negatively, and disliked (the "likeability penalty") (Rudman & Glick, 2001).

#### Examples:

1. In the confidential lists of 11 requests of Rupa by Chuck Jan 8 2016, are almost all directed at Rupa's behavior and attack her personally: e.g., "stop wearing the fleece with Penn logo" and "eliminate reasons for others to complain about personal interactions". In contrast, requests to Chuck by Rupa are almost all directed specifically to improving the program: e.g., "consideration of an EP consult service to...improve care for our pts", "...new patients to be distributed equally amongst partners to ensure our skills are not affected", and "clinic support...to help me with clinic follow-up and caring for my patients." In a clear example of gender policing in this list, Chuck wants Rupa to "consider [a] coach for improving interpersonal interactions." Although "unprofessional" is a term leveled at Dr. Bala, repeatedly it is her colleagues and co-workers who exhibit unprofessional behavior.
2. In an email to Dr. Kirsch (former chair of Anesthesia), a resident in anesthesia clearly feels no compunction in describing Dr. Bala (who is several ranks above him and Director of Complex EP Ablations) in highly pejorative terms.
3. Dr. Henrikson engages in a clear example of gender policing in his email of 9/2/2015 when he writes to Dr. Bala (after indicating how nice it was to work with her on a case) how several people "let me know how pleasant you were in the lab today." If one switches genders in a thought experiment, it is difficult to envision this patronizing and belittling comment ever being made to a male leader with Dr. Bala's stature.

4. In an example of gender policing, Kathy Heitman, a nurse, writes to Ms. Judi Workman “ultimately, it is going to be Rupa’s decision of whether to humble herself and adjust her approach.”
5. Susan Bardon (nurse anesthetist) in an email to Dr. Henrikson 11/17/15 describes a male surgeon she worked with who she notes communicated in what she perceived as the same manner as Dr. Bala. These behaviors are viewed and interpreted differently through a gendered lens. Ms. Bardon clearly describes how she excused the exact same behavior in the male physician who was charge of a complex operation/procedure because “he is an extremely skilled surgeon [with] zero tolerance for incompetence” and “if he was angered...he merely expected us all to perform at our highest level” but in Dr. Bala who is also an extremely skilled physician and has little tolerance for incompetence, Ms. Bardon she experienced this communication as “demeaning and belittling.”
6. In an email from Dr. Kirsch to Dr. Bala (Nov 12, 2015), he accuses her of “bullying” and being a “bully”, most likely from communicating in the same manner as male directive leaders. In none of the emails I reviewed from Dr. Bala was there the bullying tone exhibited in this email.
7. The terms “unprofessional” and “abusive” to describe Dr. Bala’s communication style in Izumi Harukuni’s email of 9-8-15.
8. In the email from Linda Straum to Denise Holmes, she notes “her work colleagues painted her as abrasive”.

**V. Women physicians of Asian-Indian descent may be particularly vulnerable to discrimination based on cultural stereotypes.**

Confirming that Dr. Bala was particularly vulnerable to othering and being construed as being in the outgroup in a predominantly white institution, in a study interviewing 52 physicians of Asian-Indian descent practicing in the U.S., Murti found a number of women physicians reported frequently being told that they did not look like a doctor. This study notes that “when brown Asian women...have an occupational status higher than many white men, they defy Americans’ gendered racial expectations...The Asian-Indian doctor represents ...the aggressive authoritative ‘bitch’.” (Murti, 2012). She notes that Indian female doctors are “socially intimidating, as they seem to have usurped a high social status reserved for America’s white men.” In another study of Asian-Indian women physicians in U.S. workplaces, Bhatt conducted 121 interviews with 108 physicians of Indian origin practicing in the U.S. In this study most women physicians reported experiencing gender-based discrimination and almost one-third reported bias against Indian women physicians “who were in positions of power.” Participants described that in “competitive procedure-oriented specialties and subspecialties” “women physicians faced discrimination”. One of the physicians interviewed by Bhatt said “if a woman is really strong, then people are kind of angry and bitter about that, but if a man is really strong, then he is viewed as a strong leader.” She went on to say “I think that sort of perception that a woman is a man-hater, or they use that phrase ‘ball-buster’” (Bhatt, 2013). Violation of stereotypes about Asian-Indian women noted above may contribute to the experiences described by these women physicians.

Relevance to Bala case. The experiences of women physicians of Asian-Indian descent practicing in the U.S. echo the experiences of Dr. Bala in the hostility with which her suggestions for change were met and the challenging of behaviors that would have gone unchallenged or even unnoticed in a white male in her position. Her repeated concern for patient safety, rather than being praised and acted upon, was construed as Dr. Bala being difficult and unlikeable. In fact, all she was doing was what she was recruited to do: bring a mediocre program up to current standards and use her expertise to train staff and implement programmatic re-structuring. She was asking for procedures to be conducted in a certain way based on her in depth training, considerable experience, and organizational position as director of the complex EP ablation program at OHSU.

**VI. Women physicians report more conflict and challenging behavior from nurses than their male colleagues**

In several studies, women physicians report more conflict with nurses than their male colleagues (St-Pierre & Warsame, 2020). While several of these studies, including ours, involved residents, in the study mentioned above by Pingleton et al. women full professors in internal medicine described their challenges with nurses. They noted in particular that “language patterns, communication patterns” were definitely different for male and female physicians and nurses. One woman physician was quoted as saying “women can say exactly the same thing and in exactly the same tone, exactly the same cadence as a man, and a woman will be considered a bitch.” In a recent editorial in the New England Journal of Medicine, in making the case for deep rooted misogyny in medicine Dr. Erica Kaye said “I was acutely aware of my fragile position within the hierarchy and the ways in which vindictive coded language (“she’s difficult,” “she’s emotional,” “she has no sense of humor,” “she’s hysterical”) get attached to women and harm their careers”(Kaye, 2021) This is a statement that Dr. Bala could have made as it aptly describes what happened to her.

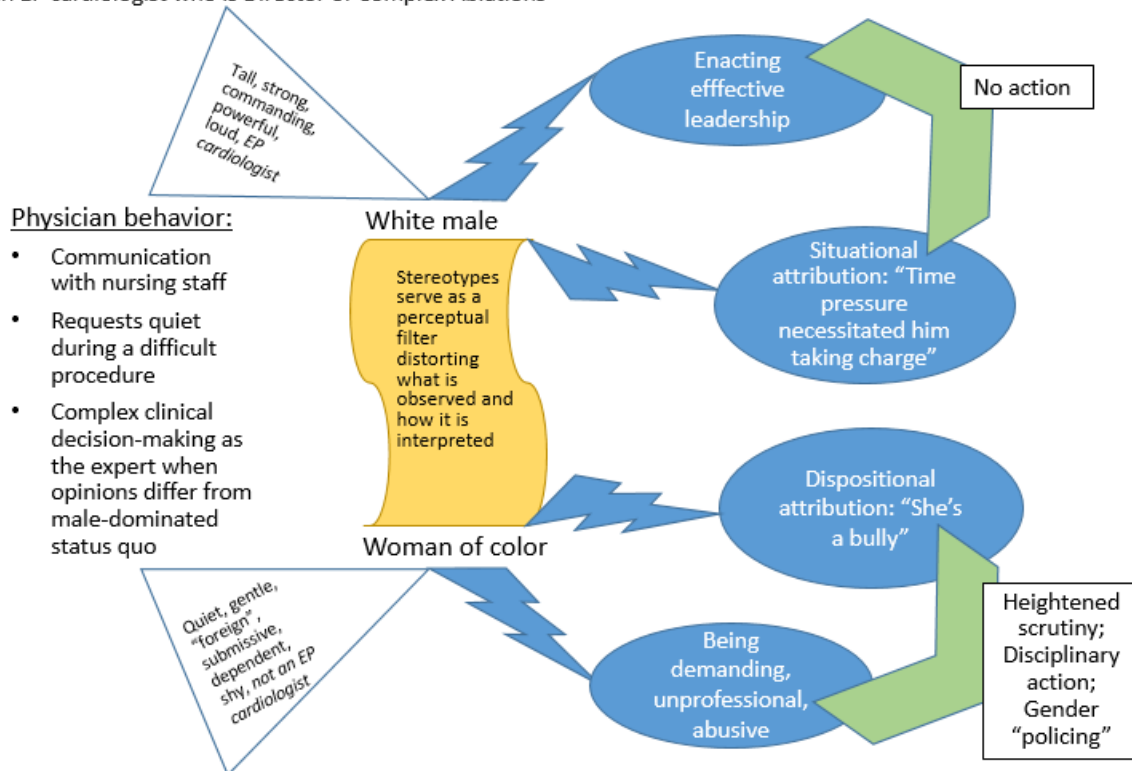
Relevance to Bala case. Several of the complaints lodged against Dr. Bala came from nurses or the physician assistant working in Electrophysiology for behaviors that would have been perceived as perfectly acceptable in a male attending but engendered a hostile or negative response when coming from Dr. Bala – a brown woman.

**VII. Was there anything the OHSU leaders could have done to prevent gender/race bias from occurring when they brought Dr. Bala into a position where such bias would be likely or to mitigate such bias once Dr. Bala became a target?**

As noted, the large body of research, including studies published over 20 years within the field of cardiology, should have made OHSU leaders cognizant that they were bringing Dr. Bala into a situation where there was a high likelihood that she would face gender and race bias. There were a number of strategies OHSU could have implemented to mitigate this bias and improve Dr. Bala’s ability to effectively carry out the work she was recruited to do. At the very least, Drs. Henrikson (as Chief of Electrophysiology), Dr. Cigarroa (as Clinical Chief of Cardiology), Dr. Kaul (as Chair of Cardiovascular Medicine at the Knight Cardiovascular Institute), and Dr. Anderson (as Chair of the Department of Medicine at OHSU) should have publically and repeatedly affirmed that Dr. Bala is in charge of Complex EP Ablation to other members of the team. Individuals in historically lower status groups such as female-gender and non-white benefit greatly from external conferral of status which could have been provided to Dr. Bala by these high status individuals (Amanatullah & Tinsley, 2013). Instead, Dr. Henrikson sided with Dr. Bala’s subordinates in ways that consistently undermined her, essentially gave them permission to criticize, and obstructed the quality improvement and patient safety changes Dr. Bala was trying to implement. Drs. Cigarroa, Kaul, and Anderson did little if anything to prevent or intervene when Dr. Bala was clearly being targeted in ways that no other physician was being targeted – including refusal by Anesthesia to staff her cases. Somehow, this absurd and discriminatory behavior was twisted to blame Dr. Bala and resulted in censure and gender policing attempts to feminize her communication style. Our work and others has shown that the automatic cognitive processes caused by the existence of group stereotypes can be interrupted to reduce bias, but it takes intentional commitment to do so. No such commitment was demonstrated in this case by anyone at OHSU. The bias-mitigating strategy that seems most effective is called “motivated self-regulation of bias” in social psychology(Monteith, Parker, & Burns, 2016), “intuitive override” in judicial reasoning(Guthrie, 2009), and “breaking the bias habit” by our research team(M. Carnes, Devine, et al., 2015; M. Carnes, Fine E., Sheridan J, 2016; P. G. Devine et al., 2017b; Pankey T, 2018). The American College of Physicians has called for such implicit bias training on a recurring basis in all organizations in which physicians work to reduce gender bias against women physicians in the workplace (Butkus et al., 2018; M. Carnes, 2018). Although these recommendations came out after Dr. Bala left OHSU, calls within academic medicine to address the well-documented gender bias against women physicians – and particularly within cardiology -- were widely known at the time of her recruitment to OHSU.

**What systemic bias looks like:**

How cultural stereotypes work against women physicians (particularly women of color) in male-typed roles such as an EP cardiologist who is Director of Complex Ablations



**Figure 1.** Woman (especially women of color) face disadvantage in leadership roles in male-dominated fields; this is exacerbated by subjectivity and ambiguity in review processes, personnel decisions based on limited data or hearsay of others' impressions, and lack of true peer evaluation

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Figure 1. summarizes how stereotypes give rise to systemic bias. Filtered through gender (and race) stereotypes, the identical behavior from a white male EP cardiologist and a female EP cardiologist (particularly a female physician of color) is perceived and interpreted differently. In a white male physician, directive communication with nursing staff or anesthesia staff aligns with the male gender stereotype of being assertive and directive, so it may even go unnoticed or if noticed it is likely to be interpreted positively: "he is effectively leading the team." If the identical behavior is enacted by a female physician it violates the female gender stereotype of being warm and relational. This breaks implicit "gender rules" and can invoke backlash in the form of heightened scrutiny, disciplinary actions, and gender policing. This may be especially true if the physician is an Asian woman because stereotypes about Asian women include being "quiet", "shy", and "submissive."



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**Signature**



Molly Carnes, MD, MS

**Date**

June 29, 2021





## Documents provided to Dr. Molly Carnes

All Depositions except for Cigarroa Vol II and Kirsch Vol II

All Deposition Exhibits (Exhibits 1-232)

The Second Amended Complaint (Dkt No 11)

Answer (Dkt No. 18)

OHSU\_RB 630

OHSU\_RB 631-632

OHSU\_RB 633

OHSU\_RB 634-635

OHSU\_RB 650

OHSU\_RB 651

OHSU\_RB 656-657

OHSU\_RB 658

OHSU\_RB 664

OHSU\_RB 724

OHSU\_RB 806

OHSU\_RB 874-875

OHSU\_RB 877-879

OHSU\_RB 880-881

OHSU\_RB 882-883

OHSU\_RB 1441-3

OHSU\_RB 1602-1603

OHSU\_RB 1624

OHSU\_RB 1629

OHSU\_RB 1687-1689

OHSU\_RB 1698

OHSU\_RB 1745

OHSU\_RB 1890-1894

OHSU\_RB 1902-1904

OHSU\_RB 2083

OHSU\_RB 2288-2315

OHSU\_RB 3838-3840

OHSU\_RB 4110-4115

OHSU\_RB 4028-4089

OHSU\_RB 4056-4057

OHSU\_RB 4090-4094

OHSU\_RB 4095-4109

OHSU 656-657

OHSU 671-672

OHSU 673-674

OHSU 817

OHSU 1447-8

OHSU 1551



OHSU 1587-8  
OHSU 1602-1603  
OHSU 1617-1619  
OHSU 1625-6  
OHSU 1665-1666  
OHSU 1827-1828  
OHSU 1830-1833  
OHSU 1843  
OHSU 1883-1884  
OHSU 1885-1886  
OHSU 1912  
OHSU 2081-2082  
OHSU 2095-2097  
OHSU 2098-2099  
OHSU 2145-2148  
OHSU 2169-2172  
OHSU 2195-2196  
BALA 76-77  
BALA 203-4  
BALA 218-221  
BALA 225-226  
BALA 232-233  
BALA 271  
BALA 277-9  
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BALA 536-539  
BALA 554-556  
BALA 600-613  
BALA 805  
BALA 827  
BALA 843  
BALA 848-9  
BALA 864-5  
BALA 869  
BALA 874-5  
BALA 877-8  
BALA 888  
BALA 904-905  
BALA 897  
BALA 935-938  
BALA 919  
BALA 947  
BALA 948-9  
BALA 952  
BALA 962  
BALA 965  
BALA 968  
BALA 992-6  
BALA 975  
BALA 997  
BALA 998-1000  
BALA 1007  
BALA 1023  
BALA 1150-1  
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BALA 1193  
BALA 1194  
BALA 1196-1197  
BALA 1200  
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BALA 1216-1218  
BALA 1219  
BALA 1220

BALA 1227  
BALA 1231  
BALA 1233  
BALA 1234  
BALA 1235-1236  
BALA 1251-1262  
BALA 1869  
BALA 1870

**CURRICULUM VITAE**  
**Molly Carnes, M.D., M.S.**

**Current Positions:**

Professor Emeritus, Department of Medicine, University of Wisconsin-Madison

**Mailing Address:**

2014 Chamberlain Ave  
 Madison, WI 53726

email: [mlcarnes@wisc.edu](mailto:mlcarnes@wisc.edu)

**Education:**

University of Michigan, Ann Arbor, Michigan, B.A., 1973  
 State University of New York at Buffalo, Buffalo, New York, M.D., 1978  
 University of Wisconsin, Madison, Wisconsin, M.S., Epidemiology/Population Health, 2001

**Postgraduate Education:**

1978-1981 Resident, Internal Medicine, University of Wisconsin Hospitals and Clinics, Madison, WI.  
 1981-1983 Fellow, Geriatrics/Gerontology, University of Wisconsin, Madison, WI  
 1983-1985 Stetler Research Fellowship (Mentor: Ned Kalin, M.D.)  
 2002-2003 Academic Leadership Program, Fellow, Committee on Institutional Cooperation  
 2006-2007 Fellowship in the 2006-2007 Class of the Executive Leadership in Academic Medicine (ELAM), Drexel University, College of Medicine.

**Board Certification:**

Internal Medicine, September 1981  
 Geriatrics, April 1988 (98th percentile)

**Faculty Appointments:**

1982 - 1985 Clinical Instructor, Dept of Medicine, UW-Madison  
 1983 - 1988 Visiting Faculty, Dept of Comparative Biosciences, School of Veterinary Medicine, UW-Madison  
 1985 - 2003 Affiliate Faculty, Institute on Aging, UW-Madison  
 1985 - 1991 Assistant Professor, Department of Medicine, Section of Geriatrics, UW-Madison  
 1991 - 1997 Associate Professor, Department of Medicine, Section of Geriatrics, UW-Madison  
 1996 - 1997 Interim Section Head, Geriatrics, Department of Medicine, UW-Madison  
 2003 - 2010 Affiliate Professor, Department of Medicine, Howard University Medical School; Washington, D.C.  
 2005 - 2009 Vice Chair for Faculty Development, Department of Medicine, UW-Madison  
 1997 - 2022 Professor, Department of Medicine, Section of Geriatrics, UW-Madison  
 2001 - 2022 Affiliate Professor, Department of Industrial & Systems Engineering, College of Eng., UW-Madison  
 1997 - 2022 Affiliate Professor, Department of Psychiatry, UW-Madison  
 2019 - 2022 Virginia Valian Professor, University of Wisconsin-Madison (WARF Named Professorship)

**Hospital Appointments:**

1981 - 1983 Physician, Dane County Home and Hospital  
 1983 - 1985 Medical Director, Hospital Based Home Care Program, William S. Middleton Memorial Veterans Hospital, Madison, WI  
 1985 - 1991 Founding Chief, Geriatrics Section, William S. Middleton Memorial Veterans Hospital  
 1991 - 1996 Associate Director for Clinical Services (and author on original proposal), Geriatric Research Education and Clinical Center (GRECC), William S. Middleton Memorial Veterans Hospital  
 1996 - 1997 Acting Director Madison GRECC  
 1991 - 1998 Founding Director, Geriatric Incontinence Clinic, University of Wisconsin  
 1994 - 2019 Founder and Director, VA Women's Health Program  
 1995 - 2011 Founder and Medical Director, VA Osteoporosis Clinic



**Other Appointments:**

1983 - 1997 Program Director, Geriatrics Physician Fellowship, University of Wisconsin and Wm. S. Middleton Memorial Veterans Hospital; (Applied for and received ACGME Accreditation in the first Geriatrics accreditation cycle, 1988; renewed 1991)

1989 - 1997 Associate Director, Geropsychiatry Fellowship, University of Wisconsin and Wm. S. Middleton Memorial Veterans Hospital (authored the proposal that established this program)

1995 - 2021 Program Director, Advanced Fellowship in Women's Health (AWH), Wm. S. Middleton Memorial Veterans Hospital

1998 – 2006 Director, DHHS designated National Center of Excellence in Women's Health

1999 - 2022 Founder and Director, UW Center for Women's Health Research

1999 - 2010 Program Director, Post-doctoral Training Program, Women's Health and Aging

2001 - 2007 Program Director, Women's Health and Aging Clinical Scientist Development Program

2002 - 2022 Co-Director (with Amy Wendt) and co-founder (with Professor Jo Handelsman) UW Women in Science and Engineering Leadership Institute (WISELI)

2004 - 2022 Co-Director and co-founder (with Professor Douglass Henderson, Engineering Physics), Wisconsin Alliance for Minority Participation (WiscAMP)

2004 - 2007 Program Director, Training and Education to Advance Multidisciplinary Clinical Research (TEAM) Program (NIH Roadmap K12)

2008 – 2022 Program Director, Training and Education to Advance Minority Scholars in Science (TEAM-Science) Program

2013 – 2021 Senior Advisor, National AWFH Coordinating Center, Department of Veterans Affairs

**Honors and Awards:**

1978 Alpha Omega Alpha, Medical Honor Society,

1978 Commencement Address, SUNY at Buffalo, School of Medicine

1982 Certificate of Appreciation for Participation in the Development of an Interdisciplinary Health Care Team, awarded by the William S. Middleton Memorial Veterans Hospital

1985-88 Career Development Award, William S. Middleton Memorial Veterans Hospital, Research Associate Level

1999 - 2022 Named recipient, first Jean Manchester Biddick - Bascom Professor of Women's Health Research, UW-Madison

2001 Costello Internist of the year award from the Wisconsin Chapter of the ACP-ASIM

2002 YWCA Woman of Distinction Award

2003 Doris Slesinger Woman Faculty Mentor of the Year, UW -Madison

2004 Athena Award

2004 Wisconsin Alumni Association, UW Cabinet 99 Women Faculty Recognition Award

2004 AAMC Women in Medicine Leadership Development Award

2006 Selected as a Fellow of the Wisconsin Academy of Sciences, Arts and Letters

2006 Recipient of the annual Joseph T. Freeman Award from the Gerontological Society of America

2007 Helen Dickie Woman Physician of the Year, Wisconsin ACP Chapter

2008 Fellow in the Association for Women in Science (AWIS)

2009 Department of Medicine Rankin Research Award, UW-Madison for significant research contributions made toward advancing field of medicine

2010 NIH Director's Pathfinder Award to Promote Scientific Workforce Diversity (one of 6 awarded nationally)

2014 Linda Joy Pollin Women's Heart Health Leadership Award from the Cedars-Sinai Heart Institute at Cedars-Sinai Medical Center.

2015 Distinguished alumni lecturer, University of Wisconsin-Madison, Department of Population Health Sciences

2016 Presidential Award, American Medical Women's Association

2017 Department of Medicine Mentor of the Year Award

2019 Bernadine Healy Award for Visionary Leadership in Women's Health, Academy of Women's Health

2019 WARF Named Professorship (selected name: Virginia Valian), University of Wisconsin-Madison

2021 Distinguished Educator Award, Association for Clinical and Translational Science

**Committees:**Department/School:

Research and Development Committee, Middleton VA Hospital, 1989 - 02; Chair 1991- 1992  
 Research Oversight Committee, Department of Medicine, 1995 - 1998  
 Search Committee, Geriatrics Section Head, 1998  
 Executive Committee, Clinical Investigator Preparatory Pathway (CIPP) K30, 1999 - 2007  
 Post Tenure Review Committee, Dept of Medicine 1998 - 2001  
 Mentoring Oversight Committee, Dept of Medicine (Chair), 2005 - 2019  
 Search Committee, Research Educator, Department of Medicine, 2000  
 Advisory Committee Member, K12 CA087718, Academic Clinical Oncologist Training Program, PI: M Albertini, 2000 – 2010  
 Advisory Committee Member, 1RC4AG038175-01, Building Wisconsin's Community Academic Infrastructure to Promote Aging Research, PI: J Mahoney, 2010-2015  
 GRECC Education and Evaluation Committee, 2005 – 2022  
 Search Committee, Associate Chair for Research, Department of Medicine, 2015  
 Search Committee (co-Chair), Associate Dean for Faculty Development, SMPH, 2016  
 Tenure Advisory Committee (co-Chair), Dept of Medicine 2019 - 2023  
 Women Faculty Mentoring Committee mentees:  
 Roseanne Clark (Psychiatry, awarded tenure 2003)  
 Beth Burnside (Radiology, awarded tenure 2009)  
 Tammy Sims (Pediatrics, received K23, 2004, left UW)

Department of Medicine Mentor Committees for Promotion/Tenure:

Mentor Committee, David Andes, 2001 – 2007, awarded tenure 2007.  
 Mentor Committee (Chair), Lori Bakken, 2002–2007, awarded tenure 2007  
 Mentor Committee (Chair), Cynthia Carlsson, 2003-2010, awarded tenure 2010  
 Mentor Committee (Chair), Nasia Safdar, 2008 – 2011, awarded tenure 2011  
 Mentor Committee (Chair), Christopher Crnich, 2007, awarded tenure 2014  
 Mentor Committee (Chair), Megan Piper, 2008 – 2016, awarded tenure 2016  
 Mentor Committee (Chair), Jessica Cook, 2009 – 2017, awarded tenure 2017  
 Mentor Committee, L. Lee Eckhardt, 2009 – 2017, awarded tenure 2017  
 Mentor Committee Amye Tevaarwerk, 2009 – promoted to Assoc Prof (CHS), 2016  
 Mentor Committee (Chair), Christie Bartels, 2009 – 2018, awarded tenure 2018  
 Mentor Committee (Chair), Amy Kind, 2009 – 2015, awarded tenure 2015  
 Mentor Committee (Chair), Rachel Cook, 2010 – 2013 (left UW)  
 Mentor Committee (Chair), Mihaela Teodorescu, 2010 - 2012, awarded tenure 2013  
 Mentor Committee (Chair), Barbara Bendlin, 2010 – 2015, awarded tenure 2015  
 Mentor Committee (Chair), Michelle Kimple, 2011 – 2017, awarded tenure 2017  
 Mentor Committee (Chair), Caitlin Pepperell 2012 – 2017, awarded tenure 2017  
 Mentor Committee Uchenna Njiaju, 2011 – 2013 (left UW)  
 Mentor Committee Jennifer Weiss, 2011 – 2019, awarded tenure 2019  
 Mentor Committee Jeniel Nett, 2013 – 2020, awarded tenure 2020  
 Mentor Committee (Chair) Miriam Shelef 2014–2020, awarded tenure 2020  
 Mentor Committee Michael Pulia, 2013 – 2022  
 Mentor Committee (Chair) Nicole Rogus-Pulia 2016-2022  
 Mentor Committee (Chair) Meghan Brennan 2018 - 2022  
 Appointment with tenure committee (Chair), Angela Byars-Winston, awarded tenure 2010  
 Senior CHS to tenure transfer committee (Chair), Azita Hamedani, awarded tenure 2014  
 Senior CHS to tenure transfer committee (Chair), Ann Sheehy, awarded tenure 2016  
 Senior CHS to tenure transfer committee (Chair), Carey Gleason, awarded tenure 2018

Mentor Committees in other Departments:

Pediatrics, Mentor Committee, Elizabeth Cox, 2007- 2012, awarded tenure 2012  
 Orthopedics and Rehabilitation Medicine, Mentor Committee (Chair) Alison Brooks, 2010 – 2016, awarded tenure 2016  
 Obstetrics & Gynecology, Mentor Committee (Chair), Deborah Ehrenthal, 2013 – 2016, awarded tenure 2016  
 Kinesiology, Mentor Committee, Janet Branchaw, 2014 – awarded tenure 2021  
 Obstetrics & Gynecology, Mentor Committee, Heidi Brown, 2017 – awarded tenure 2022  
 Orthopedics and Rehabilitation Medicine, Mentor Committee, Andrea Spiker 2018 - 2022

University:

Medical School Dean's Committee on Geriatrics/Gerontology, Head of Subcommittee on Education, 1984 - 1985  
 Search Committee, Chairman Family Practice, 1991  
 UW Clinical Sciences Center Medical Board, 1994 - 1996  
 UW Biological Sciences Strategic Planning Committee, 1996 - 1999  
 Search Committee, Director GCRC, 1996  
 Search Committee, Ombudsperson, Medical School, 1997  
 Internal Review Committee, Department of Pathology, 1997  
 Search Committee, VA Chief of Staff, 1997  
 Women's Health Working Group (Chair) 1997-1998  
 University of WI Re-accreditation Committee, Subcommittee on Biological Sciences, 1997  
 Faculty Advisory Committee, 1997 – 2000  
 Search Committee, Associate Dean for Research and Development, Medical School, 1998  
 Women Faculty Mentoring Program, 1997-2002, Chair, 1999-2002  
 Cluster Hire Co-Chair (with Professor Linda Schuler) for three new faculty in the Biology of Sex and Gender Differences/Women's Health Research, 1999-2003 [resulted in hiring 3 assistant professors: Judith Houck (Medical History and Ethics, Med Sch and History of Science, L&S), Jyoti Watters (Comparative Biosciences, School of Veterinary Medicine), and Christina Hull (Biomolecular Chemistry, School of Medicine and Public Health). All received tenure.  
 Search Committee, Dean School of Pharmacy, 2003  
 Institute on Aging Executive Committee, member, 1996 - 2004  
 UW Committee on Women, 1998 – 2004  
 UW Campus Planning Committee, 2001 – 2004, (Representative from Committee on Women)  
 Steering Committee, UW CCC Aging & Cancer Program, 2004  
 External Advisory Committee, UW Primate Research Center 2000 - 2010  
 Advisory Committee, Robert Wood Johnson Clinical Scholars Grant (Kindig), 2002 - 2010  
 Chair, Annual Elizabeth Karlin Women's Health Conference, 1999 - 2003  
 Planning Committee, Annual Women Veterans Conference, 1999 - 2005  
 Faculty Equity and Diversity Committee, Med School; chair, subcommittee on women, 2003 – 2005  
 University Committee, 2004-2006  
 Medical Education and Research Committee, Wisconsin Partnership Program, 2006 – 2009  
 Advisory Board Biomedical Engineering Center for Translational Research, 2006 – 2010  
 Graduate School Faculty: Master of Public Health; Clinical Investigation; Industrial & Systems Engineering  
 Chancellor Search and Screen Committee, 2007 – 2008  
 Divisional Executive – Biological Sciences Tenure Committee 2008 – 2011; Chair, 2011 (spearheaded development and approval of the Integrated Case for justifying tenure and promotion)  
 Research Mentor in the Undergraduate Research Scholars Program (URS), 2009-2010, 2010-2011  
 Steering Committee, T32 HD041921, Endocrinology & Reproductive Physiology, 2014 - 2022  
 Advisory committee, K12 DK100022, Wisconsin Multidisciplinary K12 Urologic Research Career Development Program, 2013-2022  
 Search Committee, Associate Dean for Faculty Affairs and Faculty Development, School of Medicine and Public Health (Chair), 2016 (recruited Professor Nancy Raymond)  
 Named Professorships Committee (Romnes, Kellett, WARF), Office of the Vice Chancellor for Research and Graduate Education, 2019, 2020, 2021  
 UW-Faculty Institutional Recruitment for Sustainable Transformation (UW-FIRST), led development of a multi-disciplinary campuswide proposal for this NIH award (UW-Madison not selected).

State/Region/Community:

VA Medical District 16 Geriatric Services and Studies Task Force, February - May, 1983  
 Senior Citizen's Advisory Committee, 1984  
 State of WI, Department of Health and Social Services, Division of Health. Committee to review and develop guidelines for recommending specific health screening for older adults, 1985  
 VA Medical District 16 Dementia Task Force, February 1985 – December '85  
 Wisconsin Alzheimer's Information and Training Center, Medical Scientific Board, 1986 - 1989  
 Technical Advisor for Chronic Disease Prevention and Control in Wisconsin: Goals and Objectives for the Year 2000. The Wisconsin Public Health Plan, 1989  
 Clinical Advisory Committee, HospiceCare, Inc., Madison, WI, 1989 – 91

Alzheimer's Association, Queen of the 9<sup>th</sup> and 10<sup>th</sup> Annual Alzheimers Mardi Gras Benefit Ball,  
 South Central Wisconsin Chapter, February 25, 1995 and 1996  
 Program Committee, Annual Health Summit, State Medical Society, 2000-2003  
 Meriter Retirement Services Board, 2001-2003  
 Advisory Board, Wisconsin Alzheimer's Institute, 1998 – 2004  
 Wisconsin Women's Health Foundation, Board Member and Chair, Grants and Scholarships  
 Committee, 1998 – 2023  
 Scientific Advisory Board (Chair), Judith Stitt Woman Faculty Scholar Award, Program of the WI  
 Women's Health Foundation, 1999 – 2023

National/International:

American Geriatrics Society Public Policy Committee Ad Hoc Subcommittee for the Veterans  
 Administration, Chairman, Research Section, 1985 - 87  
 Ad Hoc Reviewer for VA Merit Review Board, 1988; 1995; 2001  
 Review Committee for VA Geriatric Dentistry Fellowships, 1988  
 Program Project Reviewer, National Institute for Alcohol Abuse and Alcoholism, Rockville, MD,  
 May 10-12, 1993  
 Study Section, National Institute on Aging, Biological and Clinical Review, July, 1993 - July 1996;  
 Chair 1996-97  
 Joint NIA - Dept of Veterans Affairs Task Force to determine research priorities for the Dept. of Veterans  
 Affairs, 1996  
 Editorial Board, American Geriatric Society, Geriatric Review Syllabus, 3rd edition, April, 1994 - 1996  
 Review Committee for VA Women's Health Fellowship Programs, April, 1994  
 Associate Editor, Journal Gerontology, Medical Sciences, 1996 - 99  
 Ad hoc Reviewer for NIA, Chair Review Committee for K24 Awards in Geriatrics, 1998  
 Participant, Planning Committee to set research agenda for NIH and AHCPR funding for Swallowing  
 Research, 1 day meeting, June 30, 1999  
 NIH Roadmap Initiative, Workshop on Training Clinical Investigators, May, 2004  
 Gerontological Society of America, Task Force on Women, member, 1999 - 2004  
 President, Association of Academic Women's Health Programs, 2002 – 2007  
 Reviewer for T32 Training Grants in Clinical Research for the National Institute of Dental and  
 Craniofacial Research, June, 2005  
 Reviewer for Clinical and Translational Sciences Awards, NIH, July, 2006  
 Editorial Board, J Women's Health, 2006 – 2010  
 University of Illinois–Chicago, External Advisory Committee for NSF ADVANCE Grant, 2006-2022.  
 Brown University, External Advisory Board for NSF ADVANCE Grant, 2007 – 2011  
 Howard University, Women's Health Institute Advisory Committee, 2009 – 2012  
 Reviewer for KM1 Institutional Comparative Effectiveness Research Mentored Career Development  
 Program for NIH Center for Scientific Review, June, 2010  
 Rochester Institute of Technology, External Advisory Committee for NSF ADVANCE program, 2012-  
 2017  
 Member of the NIH Advisory Council for the National Institute of General Medical Sciences (NIGMS)  
 June, 2011 to December, 2014  
 University of Delaware, External Advisory Committee for NSF ADVANCE program. 2014-2018  
 National Science Foundation Committee of Visitors to assess the ADVANCE program, September 22-  
 23, 2014.  
 Member, NIH Council of Councils, September, 2014 – May, 2018  
 Member, NIH High-Risk, High-Reward Research Program Working Group of the Advisory Committee to  
 the Director, April 5, 2018 – March, 2019  
 Swiss National Science Foundation Sounding Board for evaluating bias in grant review, 2021 - 2022

**Trainees/students:**

As Director of Geriatrics Fellowship (1983-1997), and co-Director of the Geriatric Psychiatry  
 Fellowship, recruited and trained 25 geriatricians and 7 geropsychiatrists (~80% on faculty in 6  
 academic medical centers in US and one in Iceland).  
 As Director of Women's Health Fellowship (1995 - 2021), Postdoctoral Training Program in  
 Women's Health and Aging (1999 - 2010), and Women's Health and Aging Clinical Scientist  
 Development Program (2002-2009), trained 45 physicians or PhD scientists.



As Director of the Roadmap K12 Training and Education to Advance Multidisciplinary Clinical Research (TEAM) Program (2004-2007), recruited 25 postdoctoral clinical research scholars.

GCRC Medical Student Summer Research support: 1988, 1989, 2002

Hilldale Award mentor for students 1988;1995; 2003; 2016

Minority High School Apprentice Program: Lisa Boyle (1993, 1994 –earned her MD at the University of Rochester); Roxanne Smith (1995 – graduated in 2004 from Duke University and practices family medicine at the Ed Hines VA Hospital in Hines, IL)

Supervised 8 internal medicine residents in a 3-year longitudinal primary care clinic (4 residents per week in a weekly women’s health clinic at the VA Hospital), 2000-2019

Chancellor’s Scholar mentor: 1998-02 (Student entered graduate school in public health at UMN.); 2004-2007 (Student entered medical school)

WI Idea Fellowship Mentor, Danielle Reis: “Tutoring Math at Wright Middle School”, 2004-05 (went to medical school at UW and then completed an orthopedic surgery residency at UWHC).

Supervise undergraduate research projects: 2-4 UW-Madison undergraduate students annually supported with course credit or as student hourlies 2000 - 2022

Post Doctoral Trainees or K12 Scholars as primary research mentor:

Earlise Ward, PhD, 2002-2007

Angela Byars-Winston, PhD, 2006-2010

Carol Isaac, PhD, 2007-2012

Christine Kolehmainen, MD, MS, 2011-2013

Anna Kaatz, MA, PhD, MPH, 2012-2014

Belinda Gutierrez, PhD, 2013-2014

Sandy Schumacher, PhD, 2013-2015

Wairimu Magua, PhD, 2014-2016

Graduate students:

PhD Committee, member, Theresa Drinka, Continuing and Vocational Education, 1991

Master’s Committee, member, Andrea Peterson, Preventive Medicine, 1999

PhD Committee, member, Jennifer Sheridan, Sociology, 2001

PhD Committee, member, Jill Boissonault, Curriculum and Instruction, 2003

PhD Committee, member, Michelle McQuirter, CAVE, 2002-2007

Master’s Committee, member, Denise Carty, Population Health Sciences, 2004 -05

Master’s Committee, member, Chimnonso Njokomna, Population Health Sciences, 2004-05

PhD Committee, member, Kristen Springer, Sociology, 2005

PhD Committee, member, Marianna Shershneva, Educational Leadership Policy Analysis, 2003-2005

PhD Committee, member, Jen Schoepke, Industrial & Systems Engineering, 2007

PhD Committee, member, Abhik Bhattacharya, Industrial & Systems Engineering, 2007

PhD Committee, member, Nasia Safdar, Industrial & Systems Engineering, 2007 – 2009

PhD Committee, member, Latola Ewers (Masters, Curriculum & Instruction), PhD ELPA 2007 - 2009

PhD Committee, member, Amy Kind, Population Health Sciences, 2008 – 2011

PhD Committee, chair and research advisor, UW-Madison Clinical Investigation (Committee degree in women’s health, language, and institutional change), Anna Kaatz, 2009 – 2012

MPH Student Preceptor, Bohkyeong Suh, “Text Analysis of R01Grant Reviews.” 2012- 2013

Career Coach for 25 underrepresented minority graduate students in the TEAM-Science program R25 GM083252, 2008-2018.

PhD Committee, research advisor, Belinda Gutierrez, Counseling Psychology, 2010 - 2013

PhD Committee, chair and research advisor, Wairimu Magua, Industrial Systems & Eng, 2012- 2014

PhD Committee, member, William T. L. Cox, Psychology, 2013 – 2015

PhD Committee, member, Patrick Forscher, Psychology, 2014 – 2015

PhD Committee, member, Trini Stickle, English, 2014 – 2015

Master’s Committee, member, Kristen Berg, Population Health Sciences, 2013-2015

PhD Committee, member, Yaiti Cancel Martinez, Urban and Regional Planning, 2014-2016

PhD Committee, member, Chelsea Mitamura, Psychology, 2014-2017

PhD Committee, member, Tyson Pankey, Counseling Psychology, 2015-2019

PhD Committee, member, Youhung Her, Social Work, 2016-2022

PhD Committee, chair and research advisor, Amy Filut, Clinical Investigation, 2016-2020

Medical students:

Shapiro Summer Research Award Mentor:

2005, Sarah Goetz (Medical Student) and Christie Bartels, MD (Chief Medical Resident):  
"Gender and perceived ability to influence patient care."

2008, Lindsay Griffin (Medical Student) Qualitative Study of Leadership in Academic Medicine.

2009, Alexandra O'Neill and Rebecca McSorley, "CareerTrack Experiences of Women Physicians: A Qualitative Study of Life Choices in Medicine."

2010, Kara Petrashek and Megan Steiner, "Career Track Experiences of Women Physicians: Spouses/Partners Perceptions of Academic Medicine."

2013, Caitlin Regner, "Qualitative Analysis at NIH K-Award Reviews."

2019, Alexis Ray, "Experiences of Academic General Internists with Discriminatory Patients."

2020, Kami Elzinga, "Qualitative Study of Experiences of Weight Bias in Primary Care Patients"

Undergraduate students:

Angela Marchant, "The Bem Sex Role Inventory and tenure criteria at top research universities," Undergraduate (Brandeis University), Summer, 2006.

Interns: Ismat Bhuiyan, Kristin Cox, Shenell Edwards (URS), Katherine Lucarelli, Katherine Muratore, Molly Stasaitis, Erika Rae Vassar-Olsen, "A Linguistic Analysis of NIH Grant Reviews: Does the Sex of the Principal Investigator Make a Difference?" 2010 – 2012

Ismat Bhuiyan, Charielle McMullan and Caroline Fleming, "Intervention to Promote Career Persistence at NIH K-Awardees" 2011-2013

Samantha Crowley, "Examination of language of the NIH Director's Pioneer Award funding announcement and the percent of women among awardees, 2004-2018" 2017-2018

Isabelle Tasse, "Assessment of Diversity and Inclusion Activities on Department of Medicine Websites" 2018-2019

Sophia Cordes, "Bias Reduction in Internal Medicine", 2018-2019

Other mentoring:

VA Research Mentor, Cynthia Phelan, RN, PhD, GRECC postdoctoral fellow, 2009 – 2011

VA Research Mentor, Barbara King, RN, PhD, GRECC postdoctoral fellow, 2010 – 2012

**Formal Teaching, Curriculum Development:**

Developed curricula for original Geriatric Fellowship, Geriatric Psychiatric Fellowship, and Women's Health Fellowship, 1983-1997.

Developed and used for weekly teaching a 12 module case-based Women's Health Curriculum for the VA Women's Health Clinic, 1999-2004 (all clinics switched to the Yale Outpatient Curriculum in 2005).

Annual lectures to Medical Residents and Fellows on "Careers in Academic Medicine." 1998-2018

Seminar in Clinical Research Evidence, Nursing 590, 2 Cr. Developed and Co-Directed by Molly Carnes and Karin Kirchhoff; offered for the first time, July – Aug, 2005 and then annually until 2007. Course is a requirement for completion of graduate program in Clinical Investigation

"Women and Leadership in Medicine, Science and Engineering," 1-3 Cr., SMPH InterEgr 650, Course Director, Spring Semester 2007 – 2017

Director of design team charged with developing a national curriculum for Women Veterans' Primary Health Care. Moderator and speaker at 8 Mini-Residencies Workshops in Madison, WI June 2008; Palo Alto, CA Aug. 2008; Baltimore, MD Sept. 2008; Nashville, TN Dec. 2008; Albuquerque, NM Feb. 2009; Orlando, FL, June 2009; Seattle, WA Sept. 2009

Led development (with Christine Kolehmainen and Anne Stahr) of the "Breaking the Bias Habit for Internal Medicine Residents", incorporated into the 2<sup>nd</sup> year medical residency curriculum, 2017

Developed and implemented (with Eve Fine, PhD and other members of the BRIM research team) curriculum for training Implementers for the Bias Reduction in Internal Medicine (BRIM) study given online to 10 Implementers from 19 participating sites, 2018- 2023

**Funding History:**

Annual direct cost (unless otherwise indicated):

Interdisciplinary Team Training in Geriatrics, Authors: T. Drinka, M. Brown, M. Carnes (one of 12 sites funded), Office of Veterans Affairs (later Department of Veterans Affairs), 1982-1990 (later subsumed into the GRECC), approx \$50,000 annually. One of 12 sites funded.



Central and Peripheral Peptide Hormones in Rhesus Monkeys, Stetler Research Foundation, P.I.: M. Carnes, M.D. (75%), Preceptor: Ned H. Kalin, M.D., 7/1/83 - 6/30/85, \$32,000 annually

Geriatric Residency Position from VA Central Office, Office of Academic Affairs, Office of Veterans Affairs (later Department of Veterans Affairs). Author: M. Carnes, 7/1/82 - 6/30/83; renewed 7/1/83 - 6/30/84, \$25,000 annually

Hospital Based Home Care Program, Co-Authors: M. Carnes, T. Drinka, ACSW, M. Brown, R.N., Office of Veterans Affairs (later Department of Veterans Affairs) 7/1/83 – 6/30/97, \$205,000 annually, one of 8 sites funded.

Geriatrics Evaluation Unit Program, Authors: M. Carnes, T. Drinka, ACSW, Office of Veterans Affairs (later Department of Veterans Affairs) 1/1/85 -recurring, \$76,000 annually - integrated into GRECC, 1997, one of 15 sites funded.

Geriatric Physician Fellowship Program Competitive Renewal. Author and Director: M. Carnes, Office of Veterans Affairs (later Department of Veterans Affairs) 7/1/86 -recurring, \$118,000 annually.

The Relative Effectiveness of Interdisciplinary Team and General Medical Non-Team Care for the Elderly Outpatients, VA and HSR&D, P.I.: William A. Craig, M.D. (M. Carnes, 5%), 7/1/84 - 6/30/85, \$10,000.

Evaluation of a Diagnostic Method to Distinguish Depression from Dementia in the Elderly by EEG Sleep Analysis, VA and HSR&D, P.I.: Stephen J. Weiler, M.D. (M. Carnes, 5%), 7/1/84 - 6/30/85, \$10,000.

Physiological and Neuroanatomical Correlates of CRF and ACTH Release, VA-Career Development Award (Salary support for P.I.), Research Associate, P.I.: M. Carnes (75%), 7/1/85 - 6/30/88, \$204,000

Episodic Secretion of ACTH in Rats, VA Merit Review, P.I.: M. Carnes (75%), 10/1/86 - 9/30/89, \$120,000

Regulation of Pulsatile ACTH Secretion. VA Career Development Award Renewal. 7/1/88 - 6/30/89, \$67,000

The Phenomenology of ACTH Micropulses, NIH FIRST Award (R29, NIDDK), PI: M Carnes (50%), 1/1/89 - 12/30/94, \$330,000

Enhancing Medication Taking Ability: the Effect on Compliance and Patient Satisfaction. Travelers Geriatric Fellowship program for Medical Students sponsored by the Travelers Insurance Company and the National Council on the Aging, Inc. Student: Ann Heaslett, M Carnes, M.D. = preceptor. 4/1/90 - 3/31/91, \$3,000

The Effects of Stress and Age on Pregnant Rats and their Fetuses. Research Fellowship, VA Office of Academic Affairs, P.I.: Susan Erisman, M.D., M Carnes = preceptor (10%). 7/1/89 - 6/30/90, \$28,000

Detailed Analysis of Pulsatile ACTH Secretion in a Hypovolemic Rat Model, VA Merit Review, PI: M Carnes (25%), 10/1/89 - 9/30/92, \$150,000

The Effects of Age and Dietary Restriction on Pulsatile ACTH Secretion, VA GRECC pilot project, PI: M Carnes (10%) 10/1/91 - 9/30/93, \$60,000

Geriatric Psychiatry Fellowship Program. Department of Veterans Affairs, Authors and Co-directors: M Carnes, T. Howell, 7/1/91 – recurring, one position annually.

VA Geriatric, Research, Education and Clinical Center. Authors: W.B. Ershler, M Carnes, J. Robbins, R. Weindruch, J. Rosenbek, T.J. Drinka, 7/1/91 - recurring, approx. \$500,000 annually.

The Incidence and Progression of Gingival Hyperplasia Secondary to Calcium Channel Blockers in a Geriatric VA Patient Population, Hartford Foundation/AFAR Scholarship. Student: Catherine Nielsen. Preceptors: A. Schuna, R.Ph. and M Carnes, M.D. 7/1/92 - 6/30/93, \$10,000.

A comparison of the complexity of ACTH and cortisol time series between men and women. Hilldale Undergraduate/Faculty Research Fellowship. Student: Jason Litwin. Preceptor: M Carnes, 7/1/93 - 8/31/93, \$4,000.

Ultradian and circadian variation in interleukin-6 and cortisol before and after estrogen replacement in osteoporotic women. Merck/American Federation of Aging Research Fellowship to Adalstein Gudmundsson. Faculty Sponsors: M Carnes, M.D., W.B. Ershler, M.D. 7/1/94 - 6/30/96, \$100,000.

Advanced Fellowship in Women's Health, Dept. of Veteran's Affairs. Author and Program Director: M Carnes, MD, 7/1/95 – 6/30/12 Renewed 7/1/12, approx. \$100,000 annually.

VA Women's Health Enhancement Funding. PI: M Carnes, 5/1/95 - recurring, \$76,000 annually

Development of Individual-Patient Physical Health Profiles with Item Response Therapy, Department of Veterans Affairs (PI: C McHorney), Co-I: M Carnes, 5%, 4/96 - 3/98, \$150,000.

Women's Health: A Strategic Priority for the UW Medical School. Lead Author: M Carnes, 1998 - 2022. approximately \$100,000 annually, 1999-2001.

Resident Manuscript-Writing Project. PI: M Carnes, 7/1/98-6/30/99. Office of Medical Education Research and Development, UW Medical School, \$3,500.

Effect of Lipid Lowering Agents and Vitamin E Therapies on Endothelial Function in Older Persons with Hypercholesterolemia, 7/97 - 6/99, Merck (P.I.: J. Stein), Co-I: M Carnes, \$20,000.

Women's Health Academic Leadership Award, K07AG00744, NIA, PI: M Carnes, (35%), 7/1/97 - 6/30/02, \$400,000. (The only such leadership award in women's health funded up to this time by the NIH.)

Evaluation of GEM Units and Geriatric Follow-up, VA Coop Study #006, Department of Veterans Affairs, Local PI and member of the Executive Committee: National PI: M Carnes; H Cohen, J Feussner, 2/95 - 3/00, ~\$380,000.

Effects of Age and Age-Related Disease on Swallowing, NIA R01 A614124, 2/94 - 1/99, (PI: J. Robbins), Co-I: M Carnes (10%) ~\$630,000.

Menopause and Midlife Aging Effects on Sleep Disorders, NIA, RO1 A614124 (PI: T Young), Co-I: M Carnes, 1/02 - 12/04 (5%) ~\$1,055,610.

Development and Evaluation of a Hormone Replacement Therapy Decision – Aid; Dept. of Veterans Affairs, 10/99-9/03, (PI: M Shapira), Co-I: M Carnes, 10% (no salary), ~\$ 529,700.

Women's Health and Aging: Research and Leadership Training Grant, NIA, T32AG00265, 7/1/99 – 4/30/10, PI: M Carnes, 5% (no salary; activities integrate with other efforts to train a diverse workforce in academic science and engineering) \$939,263.

National Center of Excellence in Women's Health. Public Health Service on Women's Health. PI and Director: M Carnes, 50%, 10/1/98 - 9/30/06, \$993,282, (one of 6 sites funded in this cycle; one of 18 sites nationally); tapering contract, 2002-2006. Cooperative agreement contract, 9/1/06-8/31/07, as Ambassadors for Change in Women's Health, \$19,841.

Jean Manchester Biddick-Bascom Professor of Women's Health Research 1999 – 2022, approx \$12,500 annually.

Gender Climate Video Project, Co-I: M Carnes (PI: Foster), 7/1/99 – 6/30/00, OMERD, \$10,000.

Cluster Hire in Women's Health Research, Biology of Sex and Gender Differences. Lead author: M Carnes (Co-author: L. Schuler, Dept of Comparative Biosciences, School of Veterinary Medicine) Proposal awarded for recruitment of three new faculty, 1999.

DES National Education Campaign: Health Professional Education and Training; Development of "Bench to Bedside" essays on DES, 10/1/00 – 8/31/01, OWH, DHHS, PI: M Carnes, \$25,000

Women's Health and Aging: Clinical Scientist Development Grant, NIA K12 AG019247 9/1/02 – 8/31/09, PI: M Carnes, 10% (no salary; activities integrate with other efforts to train a diverse academic workforce in academic science and engineering)

ADVANCE Institutional Transformation Award, National Science Foundation 1/1/02 – 6/30/07, PI: M Carnes (Co-PI: Jo Handelsman, Dept of Plant Pathology, College of Agricultural and Life Sciences) (50%) (one of 9 sites funded) \$3,750,000 (total). Supports the Women in Science and Engineering Leadership Institute (WISELI)

Diversity within Cultural Diversity: Rethinking Retention Efforts for Racial/Ethnic Minorities in STEM Fields, Sloan Foundation, 2005-06, Co-I: M Carnes, no salary (PI: Angela M. Byars-Winston, Counseling Psychology); proposes to work with WiscAMP to study barriers to persistence in STEM majors for underrepresented minority undergraduate students.

Roadmap K12: Training and Education to Advance Multidisciplinary Clinical Research (TEAM) Program, 10/1/04 – 7/30/07, PI: M. Carnes (30%), NIH K12 HD049112, \$14,000,000. An NIH Roadmap initiative aimed at training a multidisciplinary cadre of future leaders in clinical research; one of 7 sites funded. Terminated after 3 years when UW-Madison was awarded CTSA.

CTSA Planning Grant, 9/17/06-9/16/07, PI: M Carnes (10%), P20RR023420-01, \$150,000.

ADVANCE, Partnership for Adaptation, Implementation, and Dissemination, National Science Foundation, 1/1/07 – 12/31/10, Co-PI: M Carnes (20%) (PI: Sheridan), Cooperative Agreement, SBE-0619979, Direct Costs: \$340,130.

Building Interdisciplinary Research Careers in Women's Health (BIRCWH) Scholars, 9/1/07-8/30/12, Co-I: M Carnes (5%) (PI: Sarto), NIH/NICHD, BIRCWH, K12 HD055894, Direct Costs: \$462,963.

National Curriculum for Women Veterans, Department of Veterans Affairs, 10/1/07-9/30/09, PI: M Carnes (15%), Direct Costs: \$340,000.

Training & Education to Advance Minorities in Science (TEAM-Science), NIH/NIGMS, 4/11/08-3/31/17, R25 GM083252, PI: M Carnes (10%), Direct Costs: \$451,902

Supplemental Funds for the Wisconsin Alliance for Minority Participation, UW System, 10/1/08-9/30/13, Co-PI: M Carnes (with Douglass Henderson, Manuela Romero), Total: \$550,000

WiscAMP Academic Enrichment Program, UW System, Closing the Achievement Gaps, 7/08-6/10, Co-PI: M Carnes (PI: Manuela Romero) \$56,181.

Center for Demography of Health and Aging (NIH/NIA) CDHA provides research support and development support in the areas of midlife and aging; economics of population aging; economics of population aging; inequalities in health and aging; and international, comparative studies of population aging. CDHA creates links between social demography and biomedical and epidemiological research on aging. P30 AG017266, 8/1/09-6/30/14, Co-I: M Carnes (Hauser PI) Direct Costs: \$487,884

Advancement of Women in STEMM: A Multi-level Research and Action Project, 10/1/09 – 9/30/13, PI: M Carnes, R01 GM088477, Annual Direct Costs \$207,500, Research to promote gender equity in academic science, technology, engineering, mathematics, and medicine STEMM).

Virtual Games for STEMM Faculty to Break the Bias Habit. NIH Director's Pathfinder Award to Promote Scientific Workforce Diversity, 9/30/10 – 8/31/13, PI: M. Carnes, DP4 GM96822, Total Costs, \$1,999,000, Research to promote faculty diversity in STEMM.

NIH/NIGMS Exploring the Science of Scientific Review. 09/27/13-06/30/2018 (Multiple PI's: M Carnes (contact), P Devine, C Ford) R01 GM111002 \$ 531,651 The goal of this grant is to use a multi-method research project to explore whether and how unintentional cognitive bias triggered by characteristics of the applicant could influence R01 grant review outcomes.

Advanced Fellowship for Women's Health (AFWH) National Coordinating Center. US Department of Veterans Affairs Women's Health Services, 2/1/13 –recurring. PI: M. Carnes; PI transferred to C. Kolehmainen 7/1/13 and Carnes became Senior Advisor. Total: \$148,327 annually. Award to Coordinate Educational Endeavors for 8 VA AFWH Fellowships.

NIH/NIGMS Breaking the Bias Cycle for Future Scientists: a Workshop to Learn, Experience and Change. 6/1/15-7/31/25 (renewed 2020) R25 GM114002 IPERT grant. Co-I: M. Carnes (PI: C. Pribbenow) Total Budget: \$1,563,432. Builds on work from NIH Director's Pathfinder Award to use the video game, *Fair Play* to teach science faculty about implicit race bias.

Wisconsin Alliance for Minority Participation, National Science Foundation 11/1/04 – 7/31/24 (renewed three times) Principal author and Co-PI: M Carnes (UW Provost, mandated to be PI by NSF)10% (no salary) \$2,500,000 (total). Formed an alliance of 21 institutions of higher education in Wisconsin to work together to double the number of underrepresented minority students receiving baccalaureate degrees in a STEM major over five years (members: 13 four-year UW campuses, 3 technical colleges with UW articulation agreements, Lawrence Univ, Marquette Univ, Beloit College, Alverno College, College of the Menominee Nation.)

NIH/NIGMS Maximizing Investigator's Research Award: Diversifying the Scientific Workforce. 5/1/17-4/30/22. R35 GM122557. PI: M. Carnes. ADC: \$214,000. Supports research aimed at increasing diversity of the scientific workforce.

UW-Madison OVRGE Doctor-Patient Communication and Shared Decision Making with High-Risk Patients. 2021-2023. Co-I: M. Carnes and T. Campbell (PI: M. Brauer) Total Budget: \$88,774,

NSF An Evidence-Based Approach Towards Technology Workforce Expansion by Increasing Female Participation in STEM Entrepreneurship. 2021, Co-PI: M. Carnes (PI: J. Eckhardt; other co-PI = M. Brauer) Total Budget: \$352,215.

NIH Gender Equity Challenge, WISELI: A Wise Approach to Gender Equity, 2021. PI: Carnes; co-I = Eve Fiine and Jennifer Sheridan), \$50,000.

#### **Fund-Raising Experience in Addition to Competitive Grants/Contracts:**

Bascom Professorship from Jean Manchester Biddick, to establish a professorship in women's health research, \$250,000, 1998.

Dr. Judith Stitt Junior Women Faculty Scholar Grant, \$50,000, and the Markos Family Breast Cancer Research Grant (\$10,000) on-going fund-raising in collaboration with the Wisconsin Women's Health Foundation, awarded every other year since 2000.

Women's Health: worked with UW Foundation and the Wisconsin Women's Health Foundation to procure several gifts toward women's health to the Medical School.

Life Cycle Research Grant: following a successful pilot project through the NSF ADVANCE grant, procured support from the Vilas Trust for ~\$310,000 annually to continue this program which provides research support for UW faculty and permanent PI's whose funding is vulnerable due to a personal crisis such as illness. The awards are now called the Vilas Life Cycle Professorships.

**Selected Invited Presentations:**

Psychiatry Grand Rounds, University of Wisconsin, "Dementia, Depression, or both?" April 13, 1984  
 Department of Medicine Research Seminar, University of Wisconsin, "Ultradian Rhythms of Plasma ACTH," May 3, 1988  
 Endocrinology Grand Rounds, University of Wisconsin, "Time Series Analysis of Hormonal Rhythms," December, 1990  
 Nutritional Sciences Research Seminar, University of Wisconsin, "Time Series Analysis of Hormonal Rhythms," February 13, 1992  
 Medical Grand Rounds, Medical College of Wisconsin, Milwaukee, WI, "Time Series Analysis of Hormonal Rhythms: Lessons for Aging," September 30, 1992  
 Special Research Lecture, University of Michigan, Reproductive Sciences Center, Ann Arbor, MI, "Issues in Time Series Analysis of Plasma ACTH," October 6, 1992  
 Frontiers in Diabetes: Cellular and Molecular Biological Research Seminar, Madison, WI, "The High Frequency Structure of Neuroendocrine Rhythms: Focus on Insulin," March 26, 1993  
 Medical Grand Rounds, University of Wisconsin, Madison, WI, "Time Series Analysis of Hormonal Rhythms: Lessons for Aging," June 18, 1993  
 "Time Series Analysis of Hormonal Rhythms: Lessons for Aging," University of Alabama, Birmingham AL, September 23, 1994  
 "Complexity of HPA Axis Rhythms," University of Arkansas, Little Rock, AR, April 11, 1995  
 New Concepts for Neuroendocrine Research (Invited Panelist). Bernard J. Carroll, M.D. (Chair), American College of Neuropsychopharmacology, San Juan, Puerto Rico, December 11, 1995  
 State Conferences on Women's Health. September, 1997. Speaker on Older Women's Health. April, 1998: Invited Panelist over 500 women attended each conference)  
 McLean Hospital, Chicago, IL, January 16, 1997 Ground Rounds "Balancing Career and Family, Advice from the Trenches."  
 "Primary Care of the Older Woman." OB/GYN Grand Rounds, University of Wisconsin, May, 1997  
 "Gender Bias in Health Care." University of WI-Milwaukee, Continuing Medical Education Conference, Milwaukee, WI, October 22, 1997  
 Second Annual State Conference on Women's Health. Aging Well. Dane County Expo Center, November 1, 1997.  
 "Women's Health Today." After Dinner Speak at Gala to Celebrate the New Women's Imaging Center, UW Department of Radiology, February, 1998  
 "Yesterday, Today, and Tomorrow." Keynote address at the UW White Coat Ceremony for the Class of 2002. August 16, 1998  
 "Non-oral Feeding: Indications, Ethical Implications, and Outcomes." State-of-the-Art Lecture, Dysphasia Research Society, New Orleans, LA, October, 1998  
 Kremer Lecture, UW School of Pharmacy: "Gender Specific Medicine", April 27, 1999  
 Graduate Women in Science: "Balancing Career and Personal Life," Madison, WI, June 2000  
 Women Faculty Mentoring Program: Experience at the University of Wisconsin, American Association of University Women, Madison, WI, June 2000  
 We the People, Wisconsin: Round table with Congresswoman Tammy Baldwin, State Senator Judy Robson, State Representative Frank Urban, and Others, October 10, 2000  
 Medical Grand Rounds, University of Wisconsin, Madison, WI, "Estrogen and Alzheimer's Disease: A Success Story Without a Happy Ending," March 9, 2001  
 Women in Government, Keynote speaker, Kohler, WI August, 2001. "What Women in Government Should Know About Women's Health."  
 University of Rochester, "Why the Absence of Women Leaders in Academic Medicine may be Bad for Your Health," May, 2001.  
 American Association of Medical Colleges Annual Meeting, invited luncheon speaker, "The Strategic Use of Humor in Academic Medicine," November, 2001  
 ACP-ASIM, WI Chapter, "Estrogen and Alzheimer's, Disease: A Success Story without a Happy Ending," "September 2001



Founding meeting of American Association of Academic Women in lung cancer, keynote speaker, "Women in Academic Medicine," October 20, 2001, re-invited in 2003 and 2005 to provide updates on the status of women in academic medicine

American Association of Medical Colleges Group on Student Affairs, "Use of Humor in Medicine and Medical Education," Palm Springs, CA, April, 2002.

UW Medical School Alumni Foundation Day on Campus, "Women's Health: Past, Present, and Future," UW-Madison, May, 2002.

Beyond Parity: Transforming Academic Medicine Through Women's Leadership, University of Illinois, Keynote Address, "The Strategic Use of Humor: She Who Laughs, Lasts," Chicago, IL, September 23, 2002

AAMC Annual Meeting, Women in Medicine, invited luncheon speaker. "The Strategic Use of Humor in Academic Medicine. San Francisco, November 12, 2002.

American College of Physicians Annual Meeting (co-presenter with Jane Mahoney), "Update on Women's Health," San Diego, CA. April, 2003.

Howard University Medical Grand Rounds, "Evaluation and Management of Delirium in Elderly Hospitalized Patients," Washington, D.C., May 16, 2003.

Woman Against Lung Cancer, Annual Meeting, "Women in Academic Medicine: Institutional Transformation Required," Chicago, IL, May 30, 2003.

Association of Women's Health, Obstetric, and Neonatal Nurses, Annual Meeting, "The Latest in Pivotal Women's Health Research," Milwaukee, WI, June 4, 2003.

Indiana University, Women's Leadership in Conference, "Women in Academic Medicine: Institutional Transformation Required," Indianapolis, IN, June 27, 2003.

University of Wisconsin Department of Medicine Medical Grand Rounds, "Update on Women's Health Research, 2002-2003," September 19, 2003

University of Texas Medical Branch, Women Faculty Grand Rounds, "The Strategic Use of Humor," Galveston, TX, October 17, 2003

University of Washington, "Women in Academic Medicine as Agents of Institutional Change," Seattle, WA, February 13, 2004.

American Gynecological and Obstetrical Society 23<sup>rd</sup> Annual Meeting, guest lecturer, "Women in Academic Leadership Positions: Institutional Transformation Required," Bolton Landing, NY, September 10, 2004.

University of Illinois, Chicago, Medical Grand Rounds: "Women in Academic Leadership" Institutional Transformation Required," Chicago, IL, October 20, 2004.

AMA Women Physician Congress (WPC), keynote speaker, "Women Physicians and Leadership: The Issues, The Goals, The Process," Washington, DC, March 12, 2005

University of Minnesota, special lecture: Women in Academic Leadership: What's Holding us Back? Minneapolis, MD, May 10, 2005.

State University of New York at Buffalo, Institute for Research and Education on Women and Gender, Keynote address at annual Graduate Student Conference, April 22, 2006.

National Institutes of Health, First Annual Meeting of the Roadmap K12 Clinical Research Scholars, "Multidisciplinary Career Development in a Disciplinary Environment," Silver Springs, MD, May 3, 2006.

Annual meeting of Graduate Women in Science, "Gender Bias in Scientific Review: A Case Study of the NIH Pioneer Award," Madison, WI, June 19, 2006.

Association for Education in Journalism and Mass Communication (AEJMC) Convention, plenary keynote speaker, August 2, 2006, San Francisco, CA.

Medical Grand Rounds, University of Utah, "Careers in Academic Medicine: Evaluation at Gatekeeping Junctures," Salt Lake City, Utah, March 21, 2007.

University of Florida, Gainesville, FL. and the Whittington Lecture, "Women Leaders in Medicine: Institutional Transformation Required," VA Medical Center, Lake City FL, May 23-24, 2007.

Annual Meeting of Association of American Medical Colleges (AAMC), faculty presenter, "Women's Academic Advancement: The influence of language," Nov. 3-4, 2007, Washington DC.

NIH, National Leadership Workshop on Mentoring Women in Biomedical Careers, session leader, "Insights into Mentoring in Biomedical Careers from Social Science Research," Nov. 27-28, 2007, Bethesda, MD

National Science Foundation, presenter, "U of Wisconsin – Madison ADVANCE Program: Did we transform the institution in 5 years?" November 29, 2007, Arlington, VA

American College of Cardiology Annual Scientific Seminar, Keynote talk to Women in Cardiology Council, "Forewarned is Forearmed: An Evidence-Based Approach to Advancing Women in Academic Medicine, March 28-29, 2009, Orlando, FL.

4<sup>th</sup> Annual Upper Midwest Consortium Meeting, Institute of Clinical and Translational Science, University of Iowa, invited to present and facilitate workshop, June 9, 2009, Iowa City, IA

American College of Physicians (ACP) WI Chapter Scientific Meeting, invited lecturer at the Women's Forum, Leadership Training for Women Physicians, Wisconsin Dells, WI, September 12, 2009

NIH National Conference, A Public Hearing and Scientific Workshop – Moving into the Future – New Dimensions and Strategies for Women's Health Research, Co-chair Scientific Workshop and presenter, Northwestern University Feinberg School of Medicine, Chicago, Oct 14-16, 2009

Association of Women in Science (AWIS) Workshop on "Rewarding Excellence through Bias Literacy: A Workshop for Awards Committees," Washington, D.C., June 24, 2010

The American Council on Education, presentation for the ACE /Alfred P. Sloan Invitational Conference for Medical School Deans, invited panelist, "Implicit Stereotype-based Bias: Potential Impact on Faculty Career Development, University of Illinois at Chicago, September 23, 2010

University of Minnesota, Medical Grand Rounds, "What You Don't Know Can Hurt You: Gender Stereotypes and Academic Career Advancement", Minneapolis, MN, Oct 28, 2010

University of Wisconsin-Madison, induction of 2012 class into Alpha Omega Alpha, Medical Honor Society. "A Career in Academic Medicine: So Far So Good," November 12, 2010.

American Geriatrics Society 2011 Annual Scientific Mtg. in National Harbor, MH, invited lecturer on panel, "Differences in Academic Advancement in Medicine and Geriatrics: The case of Gender, A Review of the Literature: Gender Differences in Academic Advancement." May 12, 2011

University of Wisconsin-Madison, Department of Surgery Grand Rounds, "Breaking the Bias Habit and Its Institutional Impact," March 13, 2012

University of Wisconsin-Madison, The BIG Learning Event, *Powerful Conversations for the Future*, invited to participate as panelist and session leader, "Promoting Gender Equity in Academic STEM," June 5-6, 2013

NIGMS TWD Director's Meeting, InterContinental Chicago, O'Hare, invited speaker, "Overcoming Implicit Bias: Good Intentions are Not Enough," June 12-14, 2013

University of Wisconsin-Madison Medical Grand Rounds, "Why are John and David More Likely to Become Department Chair than Jane or Jamal?" October 18, 2013

The Vancouver Institute, "Why are John and David More Likely to Become Department Chair than Jane or Jamal?" Vancouver, British Columbia, March 23, 2014

Cedar-Sinai Barbra Streisand Women's Health Center, "Why is Jack More Likely to Become Department Chair than Jill?", Los Angeles, CA, April 25, 2014

Women's Health Leadership Symposium, "Why is Jack More Likely to Become Department Chair than Jill?" Cedar-Sinai Medical Center, Los Angeles, CA, October 10, 2014

University of Kansas School of Medicine, "Promoting Diversity in Medicine and Science Leadership: Why Are John and Steve More Likely to Become Department Chair than Jennifer and Jamal." Kansas City, KS, October 22, 2014

Rosalind Franklin Society, "Why is John More Likely to be Department Chair than Jennifer? Time to Play Musical Chairs." Washington, DC, December 17, 2014.

Understanding Interventions to Broaden Participation in the Biomedical and Behavioral Scientific Workforce Conference, Plenary address: "Women and Leadership: From Bias to Opportunity", Philadelphia, PA, January 27, 2016.

American Association of Dental Research, Keynote address: "Why is Jack More Likely to Become Department Chair than Jill?", Los Angeles, CA, March 18, 2016.

University of Alabama, "Breaking the Bias Habit", Birmingham, AL, April 20, 2016.

American Association for the Advancement of Science (AAAS), Panel on Implicit Bias in Peer Review: Manuscripts and Grants, invited panelist. Washington, DC, April 28, 2016.

National Institutes of Health, Conference on Evidence-Based Innovations to Support Women in Biomedical Research Careers. Bethesda, MD, June 6, 2016  
<https://videocast.nih.gov/summary.asp?live=19198&bhcp=1>

White House Office of Science, Technology and Policy, Interventions to Reduce Bias in Decision-Making, National Academies of Science, Washington, D.C., June 15, 2016.



American Association of University's Association of Graduate Schools (AGS), Annual meeting. Breaking the Bias Habit, San Diego, CA, September 19, 2016.

Association of Professors of Medicine Panel on Diversity, "Breaking the Bias Habit." Baltimore, MD, March 20, 2017.

Association of Program Directors of Internal Medicine (APDIM) President's Plenary Address, "Why is Jack More Likely to Become an Interventional Cardiologist and Jill a General Internist.", Baltimore, MD, March 19, 2017.

University of Colorado, Medical Grand Rounds and Obstetrics and Gynecology Grand Rounds, Denver, Colorado, September 18-20, 2017.

University of Arkansas, "Why are Jack and Greg more likely to become department chair than Jill and Jamal" Little Rock, Arkansas, November 30, 2018.

Brown University, Psychiatry Grand Rounds, Providence, RI, December 5-7, 2017.

John Hopkins Bayview Medical Grand Rounds, Baltimore, MD, October 9, 2018

Beth Israel Deaconess Medical Grand Rounds, Boston, MA, November 15, 2018.

University of Washington Medical Grand Rounds, Seattle Washington, January 18, 2019.

Association of Clinical Psychiatrists, keynote address at annual meetings, Tampa, FL. February 23, 2018.

NIH/NINDS conference on Strengthening a Neural Network: Strengthening a Neural Network: Pathways for Institutional Change Regarding Diversity and Inclusion, keynote address, "Breaking the Bias Habit", Bethesda, MD, April 29, 2019.

Women's Health 2019 Congress, keynote address at annual meeting, "Breaking the Bias Habit", Norfolk, VA, June 29, 2019.

AO Foundation, invited webinar, "Bias is a Habit that Can be Broken", May 20, 2020.

Brigham and Women's Sperling Family Leadership Accelerator, "Gender Bias is a Habit that Can be Broken" (given virtually), January 28, 2021.

Osaka City University, keynote talk at Symposium on Gender Equality in Science and Engineering (given virtually), "Advancing Gender Equity in Science, Engineering, and Medicine", February 26, 2021.

Stanford University, Department of Medicine Grand Rounds, "Bias is a Habit that Can be Broken" (given virtually). Sept 8, 2021.

NIH/Office of the Director (OD), Scientific Workforce Diversity Seminar Series. Is Implicit Bias Training Effective? (on a virtual panel with Shelley Correll, Frank Dobbin, and Markus Brauer), Sep 27, 2021.

NIH/ORWH, Effective Approaches to Fostering Faculty Gender Diversity, Equity, and Inclusion: Celebrating Progress. Effective Tools for Assessing and Monitoring Outcomes (part of a panel with Tiffany Ana Lopez, Christiane Spitzmuller, and Jerica Berge), Oct 5, 2021.

Big Ten Academic Alliance, Responsible Conduct of Research (BTAA-RCR) Collaborative. Inclusivity and Research Integrity: Who is Responsible (plenary speaker), Oct 14, 2021.

NIH/Office of Research on Women's Health (ORWH). Advancing NIH Research on the Health of Women: A 2021 Conference, keynote speaker, "How Stereotypes Underpin Inequities for Women in Academic STEM and Advancements in Women's Health, Oct 20, 2021.

#### **Advising/Consultation/Visiting Professor:**

University of Minnesota, Department of Family Practice: invited to consult with a developing women's health research program and meet with individual faculty to advise on how to write K-awards to the NIH, Minneapolis, MN, 2000

Iceland: Invited by the Surgeon General of Iceland to meet with public officials, health care providers, and academic personnel to provide advice regarding the development of academic programs in women's health and women's leadership development in academic health sciences, Reykjavik, Iceland, April, 2003.

Indiana University: invited to meet with Associate Dean of the Medical School and directors of the Leadership component of the IU National Center of Excellence in Women's Health regarding strategies to increase the participation and advancement of women in academic medicine., Indianapolis, IN, June 27, 2003.

Virginia Commonwealth University/Medical College of Virginia: invited by the Dean of the Medical School and the Director of the VCU National Center of Excellence in Women's Health to provide consultation on increasing the diversity of faculty and the successful career development of women faculty, Richmond, VA, September, 2004.

University of Illinois, Chicago: invited by the Dean of the Medical School and the Director of the Center for Research on Women and Gender to advise on strategies to increase the participation and advancement of women. In addition to the Medical School, held discussions with faculty in engineering and met with the dean of Engineering and Letters and Science, October, 2004.

Office of Research on Women's Health, Special Roundtable to discuss women at NIH, invited speaker: "Impact of gender on evaluation of scientific work," Washington, D.C., November 16, 2004 (as a result of this presentation, ORWH included in its priorities for 2005, examination of gender bias in scientific review and the ORWH Advisory Committee sent a letter to the NIH Deputy Director questioning the absence of women in the Director's Pioneer Awardees).

University of Texas, Galveston, paid consultant on development of a K12 Roadmap proposal for a Multidisciplinary Clinical Research Training Center, 2005.

Indiana University, Doris Merritt Annual Lectureship, "Women in Academic Leadership" Indianapolis, IN, April 26, 2005 and Medical Grand Rounds, "Women's Health: Where Do We Go from Here?" April 27, 2005.

University of Minnesota: invited by the Dean of the Medical School to meet with and advise chairs, center directors, and administrators on search committee training to increase the diversity of the applicant pool, Minneapolis, MN, May, 2005.

Washington University, led two full day Train-the-Trainees workshops with Jo Handelsman, Eve Fine and Jennifer Sheridan on Searching for Excellence and Diversity, St. Louis, MO, March 2007.

Brown University, The Warren Alpert Medical School, Keynote presentations, "NIH Director's Pioneer Award: Lesson in Scientific Review," and "Women in Academic Medicine: Institutional Transformation Required" and Workshop, "Lessons Learned in Shaping a Career," May 2-3, 2007.

University of Minnesota, Invited by Institute of Technology to consult on program development to increase the recruitment and advancement of Women in Science and Engineering, Minneapolis, MN, April 11-12, 2007.

University of Virginia, invited lecturer, project director and table facilitator, for Leadership in Academic Matters (LAM) Breaking the Prejudice Habit Through Bias Literacy Workshop, Charlottesville, VA, March 8-10, 2009.

University of Pittsburgh, invited to speak and meet with several groups including Invited Keynote at the Celebration of Women in Medicine and Science Day, "Gender Bias in Academic Medicine: Pitfalls, Promise and Progress;" Network talk, "Practical Issues on Hitting the Glass Ceiling in Women's Health and Women's Leadership in Academic Medicine – the View from Wisconsin;" and BIRCWH conference talk, "The Faculty Search Process and Gender Bias." April 27-28, 2009, Pittsburgh, PA

Penn State College of Medicine, Hershey Summit on Breaking the Glass Ceiling: Designing a Culture that Promotes Satisfaction and Success. Invited speaker, "Factors Contributing to and Influencing the Current State," member of the planning committee and panel on "Climate Issues," May 13-15, 2009, Hershey, PA

Rome, Italy, invited by the Italian Department for Equal Opportunities at the Presidency of the Council of Ministers (DPO), to participate and contribute as a speaker teaching on the results of her research, at the PRAactising Gender Equality in Science Conference, "The Women's way into science: Lessons learned and new challenges for gender equality" (PRA.G.E.S.) in Rome at the Presidency of the Council of Ministers, Via Santa Maria, December, 2009.

Stanford University, 2010 Distinguished Lecturer, (gave several lectures and presented a workshop on increasing faculty diversity) Palo Alto, California, October 20 – 23, 2010.

University of Connecticut Storrs Campus, "The Importance of Bias Literacy in Achieving Diversity in STEMM," Nov 16, 2010; Medical and Dental School Farmington Campus, "Gender Stereotypes and Academic Careers: What You Don't Know Can Hurt You," Nov 17, 2010.

University of Toronto, invited by the President of the (CCDS) Canadian Council of Deans of Science to lecture at their annual meeting; title of talk, "Promoting Gender Equity in Academic STEMM." June 20, 2011.

University of Iceland, invited as distinguished visiting professor: presented the Workshop "Breaking the Prejudice Habit Through Bias Literacy" and, "Gender Stereotypes and Academic Careers: What You Don't Know Can Hurt You" at Medical Grand Rounds, September, 2011.

Johns Hopkins University School of Medicine, invited to present, "Retaining and Advancing Excellent

Faculty through Bias Literacy Workshop," at their Dept. of Surgery Diversity Retreat; discussed "Unconscious Bias" with senior faculty; and presented, "How Do Gender Stereotypes Affect Academic Career Development" to the SOM Office of Diversity and Cultural competency LPWF Special Program, January, 2012.

Wake Forest Baptist Medical Center, invited to present/facilitate, "Searching for Excellence & Diversity: A Workshop for Search Committees," to faculty and staff, Greensboro, NC, February 2012.

Northwestern University, featured speaker for Women's Health Week, "Breaking the Bias Habit", Chicago, IL, May 15, 2012.

Invited speaker NIH Workshop on Brainstorming Ideas for Conducting Studies with the Peer Review System: Strategies for Enhancing the Diversity of the Biomedical Research Workforce, Bethesda, MD, March 23, 2012.

Co-Chair NIH Conference on Research on Causal Factors and Interventions that Promote and Support the Careers of Women in Biomedical and Behavioral Science and Engineering. Bethesda, MD, November 8-9, 2012.

Brigham and Women's Hospital, invited to the 1<sup>st</sup> Estellita and Yousuf Karsh Visiting Professorship in Women's Health Symposium to convene full professors in Women's Health from the US and Canada, Boston, MA, May, 2013.

Harvard Medical School, as visiting AOA Professor, presented, "Why are John and David more likely to become department chair than Joan or Jamal?" and held discussions with key stakeholders/HMS leaders on research/evidence for best search practices to search committee chairs and a task force on faculty recruitment, Boston, MA, October 22-23, 2013.

Scientific Workforce Analysis and Modeling Program Bi-annual Meeting, invited to represent the National Advisory General Medical Sciences Council (NAGMS), The Ohio State University, Columbus, Ohio, October 29, 2013

Emory University, Laney Graduate School, as visiting professor, presented, "Breaking the Gender Bias Habit," in addition to meeting with representatives from their Higher Education Academic Learning Community and their Center for Faculty Development and Excellence, Atlanta, GA, January, 2014.

Yale University, Yale's Diversity Summit. invited by the President of Yale to be part of a team of experts to advise Yale on diversity issues. Other members of the Yale Diversity Summit Team were Francisco Cigarroa (Chancellor, University of Texas System and chair of the Diversity Summit Team), Nancy Andrews (Dean, Duke University School of Medicine), Edward Barksdale (Vice Chair, Department of Pediatric Surgery, Case Western Research University School of Medicine), Robert Birgeneau (Former Chancellor, University of California at Berkeley), Marye Anne Fox (Former Chancellor, University of California San Diego), Earl Lewis (President, The Andrew W. Mellon Foundation), George Sanchez (Vice Dean for Diversity and Strategic Initiatives, University of Southern California), Kurt Schmoke (Former Dean, Howard University School of Law and Former Mayor of Baltimore), Ruth Simmons (Former President, Brown University), February 11-12, 2014.

University of Minnesota, "Implementing Workshops for Search Committees: A Train-the-Trainer Workshop for Campuses Wanting to Implement Training for Faculty Search Committees." Minneapolis, MN. July 22, 2014.

Medical University of South Carolina, ARROWS, External Advisory Board, Charleston, SC, September 25, 2014

Rochester Institute of Technology, ADVANCE External Advisory Board Meeting, Rochester, NY October 2, 2014

University of Rochester School of Medicine and Dentistry, as part of the seminar series, Developing from Within: Exploring and Enhancing Choices for Mid-Career Women in Academic Medicine. presented "Why is Jack More Likely to Become Department Chair than Jill?", and conducted "Breaking the Gender Bias Habit: A Workshop to Promote Individual and Institutional Behavioral Change". October 30-31, 2014.

University of Maine, invited to present the "Breaking the Bias Habit Workshop". November 20, 2014.

Howard Hughes Medical Institute, invited to presented, "Breaking the Gender Bias Habit," in addition to meeting with representatives from their Science Department. Chevy Chase, MD, December, 16, 2014.

Ohio State University, invited to present, "Train the Trainer-Searching for Excellence & Diversity Workshops for Search Committees Recruiting and Hiring Faculty". January 9, 2015.

University of Virginia, invited by ADVANCE program to present as train the trainer, two workshops: "Breaking the Gender Bias Habit", Charlottesville, Virginia, October 16, 2015.

University of Delaware, External Advisory Committee, ADVANCE program. Site visit, Newark, Delaware. October 21, 2015.

Virginia Commonwealth University, invited to review and site visit the Institute for Women's Health. January 12-13, 2016.

Kansas State University, invited to consult on gender issues, presented interactive sessions to administrative leaders, lectured to women faculty on "From Bias to Opportunity", and put on a workshop on "Breaking the Bias Habit, Manhattan, KS, February 2, 2016.

Colorado State University, invited to consult on gender issues and gave lecture on "Why is Jack more likely to become department chair than Jill?", Fort Collins, CO, February 10, 2016.

Massachusetts Institute of Technology (MIT), invited to present two workshops: "Breaking the Gender Bias Habit", Boston, MA, April 4, 2016.

Princeton, Workshop using *Fair Play*, an interactive video game, to break the race bias habit. Princeton, NJ, May 5, 2016.

University of Chicago, "Searching for Excellence and Diversity", a workshop to train faculty and search committees to attract broad and diverse applicant pools for faculty hires. Chicago, IL, November 17, 2016.

Indiana University Purdue University Indianapolis (IUPUI), "Breaking the Gender Bias Habit," an invited workshop for the school of science and consultation with department chairs. Indianapolis, IN, March 27, 2017.

#### Major Research Interests:

- ❖ Increasing the diversity of leadership in academic medicine, science, and engineering as a means to effect institutional transformation
- ❖ Influence of gender on physician education and training.

#### Articles Published or in Press:

1. Davis TJ, **Carnes M**, Carbone PP, Crummy AB. Coarctation of the aorta from a mediastinal germ cell tumor: a case report. *Med Pediatr Oncol.* 1982;10(5):471-6. PMID: 7144697.
2. **Carnes M**, Smith JC, Kalin NH, Bauwens SF. Effects of chronic medical illness and dementia on the dexamethasone suppression test. *J Am Geriatr Soc.* 1983;31(5):269-71. PMID: 6841854.
3. **Carnes M**, Smith JC, Kalin NH, Bauwens SF. The dexamethasone suppression test in demented outpatients with and without depression. *Psychiatry Res.* 1983;9(4):337-44. PMID: 6580662.
4. **Carnes M**. Preventive health care for the elderly. *Wis Med J.* 1983;82(8):15-8. PMID: 6636816.
5. Kalin NH, **Carnes M**. Biological correlates of attachment bond disruption in humans and nonhuman primates. *Prog Neuropsychopharmacol Biol Psychiatry.* 1984;8(3):459-69. Review. PMID: 6435181.
6. Kalin NH, **Carnes M**, Barksdale CM, Shelton SE, Stewart RD, Risch SC. Effects of acute behavioral stress on plasma and cerebrospinal fluid ACTH and beta-endorphin in rhesus monkeys. *Neuroendocrinology.* 1985;40(2):97-101. PMID: 2983257.
7. **Carnes M**, Kalin NH. Further remarks on the dexamethasone suppression test in the elderly. *Clinical Gerontologist* 1984;3:28-35.
8. **Carnes M**. Diagnosis and management of dementia in the elderly. *Physical and Occupational Therapy in Geriatrics* 1985;3:11-24.
9. Adams EM, Hafez GR, **Carnes M**, Wiesner JK, Graziano FM. The development of polymyositis in a patient with toxoplasmosis: clinical and pathologic findings and review of literature. *Clin Exp Rheumatol.* 1984;2(3):205-8. PMID: 6529871.
10. Kalin NH, Shelton SE, Barksdale CM, **Carnes M**. The diurnal variation of immunoreactive adrenocorticotropin in rhesus monkey plasma and cerebrospinal fluid. *Life Sci.* 1985; 25;36(12):1135-40. PMID: 2984495.
11. Kalin NH, Gibbs DM, Barksdale CM, Shelton SE, **Carnes M**. Behavioral stress decreases plasma oxytocin concentrations in primates. *Life Sci.* 1985;36(13):1275-80. PMID: 2984498.



12. **Carnes M**, Brownfield MS, Kalin NH, Lent S, Barksdale CM. Episodic secretion of ACTH in rats. *Peptides*. 1986;7(2):219-23. PMID: 3016680.
13. **Carnes M**, Gunter-Hunt G. The lack of screening for dementia and depression in elderly medical patients. *Clinical Gerontologist* 1987;6:59-61.
14. **Carnes M**, Gunter-Hunt G, Hess J, Drinka T. Preventive health maneuvers for the elderly: recommendations vs reimbursement policies. *Wis Med J*. 1987;86(2):27-9. PMID: 3564514.
15. **Carnes M**, Barksdale CM, Kalin NH, Brownfield MS, Lent SJ. Effects of dexamethasone on central and peripheral ACTH systems in the rat. *Neuroendocrinology*. 1987;45(2):160-4. PMID: 3033536.
16. Kerski D\*, Drinka T, **Carnes M**, Golob K, Craig WA. Post-geriatric evaluation unit follow-up: team versus nonteam. *J Gerontol*. 1987;42(2):191-5. PMID: 3819345.
17. Hostetter G, Eaton A, **Carnes M**, Gildner J, Brownfield MS. Immunocytochemical distribution of luteinizing hormone in rat central nervous system. *Neuroendocrinology*. 1987;46(3):185-93. PMID: 3658109.
18. **Carnes M**, Gunter-Hunt G, Rodgers E\*. The effect of an interdisciplinary geriatrics clinic visit on mental status. *J Am Geriatr Soc*. 1987;35(11):1035-6. PMID: 3668139.
19. **Carnes M**, Lent SJ, Erisman S\*, Feyzi J. Changes in mean plasma ACTH reflect changes in amplitude and frequency of secretory pulses. *Life Sci*. 1988;43(22):1785-90. PMID: 2849007.
20. **Carnes M**, Kalin NH, Lent SJ, Barksdale CM, Brownfield MS. Pulsatile ACTH secretion: variation with time of day and relationship to cortisol. *Peptides*. 1988;9(2):325-31. PMID: 2836825.
21. Shorr R\*, **Carnes M**. Theories of aging. *Wis Med J*. 1988;87(12):11-9. Review. PMID: 3070968.
22. **Carnes M**, Lent SJ, Erisman S\*, Barksdale C, Feyzi J. Immunoneutralization of corticotropin-releasing hormone prevents the diurnal surge of ACTH. *Life Sci*. 1989;45(12):1049-56. PMID: 2552244.
23. **Carnes M**, Lent S, Feyzi J, Hazel D\*. Plasma adrenocorticotrophic hormone in the rat demonstrates three different rhythms within 24 h. *Neuroendocrinology*. 1989;50(1):17-25. PMID: 2547174.
24. Van de Kar LD, **Carnes M**, Maslowski RJ, Bonadonna AM, Rittenhouse PA, Kunimoto K, Piechowski RA, Bethea CL. Neuroendocrine evidence for denervation supersensitivity of serotonin receptors: effects of the 5-HT agonist RU 24969 on corticotropin, corticosterone, prolactin and renin secretion. *J Pharmacol Exp Ther*. 1989;251(2):428-34. PMID: 2553918.
25. Erisman S\*, **Carnes M**, Takahashi LK, Lent SJ. The effects of stress on plasma ACTH and corticosterone in young and aging pregnant rats and their fetuses. *Life Sci*. 1990;47(17):1527-33. PMID: 2174486.
26. **Carnes M**, Lent SJ, Goodman B, Mueller C, Saydoff J, Erisman S\*. Effects of immunoneutralization of corticotropin-releasing hormone on ultradian rhythms of plasma adrenocorticotropin. *Endocrinology*. 1990;126(4):1904-13. PMID: 2156671
27. **Carnes M**, Goodman BM, Lent SJ. High resolution spectral analysis of plasma adrenocorticotropin reveals a multifactorial frequency structure. *Endocrinology*. 1991;128(2):902-10. PMID: 1846594.
28. **Carnes M**, Brownfield M, Lent SJ, Nichols K, Schuler L. Pulsatile ACTH and cortisol in goats: effects of insulin-induced hypoglycemia and dexamethasone. *Neuroendocrinology*. 1992;55(1):97-104. PMID: 1319009.
29. Van de Kar LD, Bonadonna AM, Rittenhouse PA, Kerr JE, Levy AD, Iyer L, Herbert GB, Alvarez Sanz MC, Lent SJ, **Carnes M**. Prior chronic exposure to cocaine inhibits the serotonergic stimulation of ACTH and secretion of corticosterone. *Neuropharmacology*. 1992;31(2):169-175. PMID: 1313159.
30. Mahoney J\*, Euhardy R, **Carnes M**. A comparison of a two-wheeled walker and a three-wheeled walker in a geriatric population. *J Am Geriatr Soc*. 1992;40(3):208-12. PMID: 1538036.

31. Rittenhouse PA, Bakkum EA, O'Connor PA, **Carnes M**, Bethea CL, van de Kar LD. Comparison of neuroendocrine and behavioral effects of ipsapirone, a 5-HT<sub>1A</sub> agonist, in three stress paradigms: immobilization, forced swim and conditioned fear. *Brain Res.* 1992;580(1-2):205-14. PMID: 1354556.
32. Van de Kar LD, Rittenhouse PA, O'Connor P, Palionis T, Brownfield MS, Lent SJ, **Carnes M**, Bethea CL. Effect of cocaine injections on the neuroendocrine response to the serotonin agonist MK-212. *Biol Psychiatry.* 1992;32(3):258-69. PMID: 1330009.
33. Saydoff JA\*, **Carnes M**, Brownfield MS. The role of serotonergic neurons in intravenous hypertonic saline-induced secretion of vasopressin, oxytocin, and ACTH. *Brain Res Bull.* 1993;32(6):567-72. PMID: 8221154.
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35. Goodman BM, **Carnes M**, Lent SJ. Model simulations of ACTH pulsatility. *Life Sci.* 1994;54(22):1659-69. PMID: 8177008.
36. Mahoney J\*, Drinka TJ, Abler R\*, Gunter-Hunt G, Matthews C, Gravenstein S\*, **Carnes M**. Screening for depression: single question versus GDS. *J Am Geriatr Soc.* 1994;42(9):1006-8. PMID: 8064088.
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38. Rittenhouse PA, Bakkum EA, Levy AD, Li Q, **Carnes M**, van de Kar LD. Evidence that ACTH secretion is regulated by serotonin<sub>2A/2C</sub> (5-HT<sub>2A/2C</sub>) receptors. *J Pharmacol Exp Ther.* 1994;271(3):1647-55. PMID: 7996480.
39. Bissette G, Griff D, **Carnes M**, Goodman B, Lavine M, Levant B. Apparent seasonal rhythms in hypothalamic neuropeptides in rats without photoperiod changes. *Endocrinology.* 1995;136(2):622-8. PMID: 7835296.
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41. Wich BK\*, **Carnes M**. Menopause and the aging female reproductive system. *Endocrinol Metab Clin North Am.* 1995;24(2):273-95. Review. PMID: 7656892.
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43. Mahoney JE\*, Gray SL, **Carnes M**. Prevention and treatment of the complications of diabetes mellitus. *N Engl J Med.* 1995;21;333(12):802. PMID: 7643897.
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47. **Carnes M**. Balancing family and career: advice from the trenches. *Ann Intern Med.* 1996;125(7):618-20. PMID: 8815763.
48. Gudmundsson A\*, **Carnes M**. Pulsatile adrenocorticotrophic hormone: an overview. *Biol Psychiatry.* 1997;41(3):342-65. Review. PMID: 9024958.
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54. **Carnes M**. The Department of Veterans Affairs: A major force in Women's health. *SGIM Forum* 1998; 21:2, 9.
55. Steffen KA\*, **Carnes M**. Hormone replacement therapy in the aging woman. Part I: Hormone replacement therapy and coronary heart disease. *Ann Long Term Care* 1999;7:221-225.
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58. **Carnes M**, Wells T. The invisible woman. *Arch Intern Med*. 1999;159(1):99-100. PMID: 9892339.
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\*= student, resident, fellow, or postdoc

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30. Interdisciplinary Training in gerontology and geriatrics: perspectives on old and new initiatives--are we meeting the challenges symposium. **Carnes M\*** The perspective of an academic geriatrician. (Invited paper presented at Annual Meeting Gerontological Society of American, San Francisco, CA, November, 1991.) Gerontologist 31:IIA108, 1991.
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  37. Goodman BM\*, **Carnes M**. Implications of model simulations designed to replicate observed ACTH pulsatility in human subjects. (presented at the 23rd Annual Meeting of the Society for Neuroscience, Washington, D.C., November, 1993).
  38. **Carnes M**\*, Brownfield MS, Vo H, Lent SJ. HPLC reveals different ACTH fragments in plasma of old vs young rats. (presented at the 50th Annual Meeting of the Gerontological Society of American, Atlanta, GA, November, 1994).
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  40. **Carnes M**\*. Dysphagia as a geriatric syndrome. Part of a symposium on Swallowing and Aging Chaired by J. Robbins, Ph.D. (presented at the 50th Annual Meeting of the Gerontological Society of America, Atlanta, GA, November, 1994).
  41. **Carnes M**\*. Delirium in elderly medical patients. Invited Meet the Professor speaker. (American Geriatric Society Annual Meeting, Washington, DC, May, 1995).
  42. Gudmundsson A\*, Ershler WB, Lent SJ, Goodman B, Barczy S, **Carnes M**. Circadian variation of interleukin-6 (IL-6) in a healthy post menopausal woman. (presented at the 51st Annual Meeting of the Gerontological Society of America, Los Angeles, CA, November, 1995).
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  45. Caroll BJ, Young E, **Carnes M**, Mandell AJ, Veldhuis JD. Analytic methods in neuroendocrine research (Invited Speaker). American College of Neuropsychopharmacology (ACNP), 34th Annual Meeting, San Juan, Puerto Rico, December, 1995.
  46. Kis AM\*, **Carnes M**. The sensitivity and specificity of serum iron indicators for iron deficiency in anemic veterans with medical illnesses. American Geriatric Society Annual Meeting, Chicago, IL, May, 1996.
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  50. Women in Medicine. Symposium. **Carnes M** (Chair and Organizer), L. Fried, J. McMurray, H. Weissman. Annual Meeting Gerontological Society of America. Cincinnati, OH, November 1997.
  51. Foster SW\*, McMurray JE, Linzer M, **Carnes M**, Leavitt JW, Rosenberg MA. Surveying medical school gender climate: Obstacles and initiatives. Annual Meeting Society of General Internal Medicine, Chicago, April 1998. J Gen Int Med 13:Supplement 1.
  52. Elliott ME\*, Klein LC, **Carnes ML**, Gudmundsson A, Skoronski RM, Benkley PC. Management of glucocorticoid-induced osteoporosis in male veterans. Am Soc Bone and Mineral Research, Fall, 1998.



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54. **Carnes M\***, McMurray J, Foster SW, Allen C. Development of a women's health fellowship. International Congress on Women's Health, Washington DC, June, 1998.
55. Funding for Advanced Training in Women's Health. Symposium. **Carnes M** (Chair and Organizer) L. Wolff (DVA), D. Vogel (NICHD), C. Hudgings (NINR), J.T. Harden (NIA), 1999 National Centers of Excellence in Women's Health: A National Forum. Washington DC, Nov. 1999.
56. **Carnes M.**(Chair), Foster, S., McMurray, J., Bickel, J. Women in Academic Medicine: Gender climate, work-life and career satisfaction, Women's Health research, and humor. Annual Meeting Gerontological Society of America, Washington, D.C., Nov. 2000
57. **Carnes M\***. Springer K\*, Kuo D\*, Sheridan J, Hauser T, Hauser RM. Childhood violence has lifelong health consequences: data from the Wisconsin Longitudinal Study. Annual Meeting Gerontological Society of America, Chicago, IL, November, 2001.
58. **Carnes M** (Chair), Atkinson R, Gomez T, Whigham L., Obesity: A model of accelerated aging. Annual Meeting Gerontological Society of America, Chicago, IL, November, 2001.
59. **Carnes M**, Handelsman J, Sheridan J. The NSF ADVANCE Program at the University of Wisconsin-Madison: An interdisciplinary effort to increase the recruitment, retention, and advancement of women in academic departments in the biological and physical sciences. Conference on Retaining Women in Early Academic Science, Mathematics, Engineering, and Technology, Iowa State University, Ames, IA, October, 2002.
60. **Carnes M** (Chair), Studentski S., Freund K, Norsigian J. The real scoop on mammography: Evidence, politics, practice. Symposium sponsored by GSA Task Force on Women, Annual Meeting, Gerontological Society of America, Boston, MA, November, 2002.
61. Messinger-Rapport, B, **Carnes M** (co-chairs). Controversies in Hormone Management of Older Women. Speakers: Wenger, N: Cardiovascular Disease and HRT; Psaty B: Pharmacogenetics and HRT, American Geriatrics Society Annual Meeting, Baltimore, MD, May 15, 2003.
62. Springer KW\*, Kuo D\*, Sheridan J, **Carnes M**. The Long-Term Health Consequences of Childhood Physical Abuse: Evidence from a Large Sample of Middle-Aged Men and Women. presented at the 2003 meetings of the Population Association of America, Minneapolis, Minnesota, May, 2003.
63. **Carnes M** (chair), Salerno J, Bernard M, Chernoff R, Gerety M. Women in Academic Medicine: Surviving and Thriving. Symposium at the Annual Meeting, Gerontological Society of America, San Diego, CA, November, 2003.
64. Shershneva, MB\*, **Carnes M**, Bakken, LL. A model of teaching-learning transaction in physician-to-physician consultation. presented at the Fall Meeting of the Society for Academic CME, Boston, MA, November 2004. [presenter: Shershneva, MB]. SACME Fall Meeting 2004, Conference on Research in Medical Education 2004 (RIME) and 115th AAMC Annual Meeting, Boston, MA, November 5-10, 2004.
65. Sheridan J, Pribbenow CM, Fine E, Handelsman J, **Carnes M**. Climate Change at the University of Wisconsin-Madison: What Changed, and Did ADVANCE Have an Impact? Women in Engineering Programs & Advocates Network (WEPAN) 2007.
66. Sheridan J, Fine E, Winchell J, Pribbenow CM, **Carnes M**, Handelsman J. Searching for Excellence & Diversity: Does Training Faculty Search Committees Improve Hiring of Women? American Society for Engineering Education (ASEE) 2007.
67. Isaac C\*, Lee B, **Carnes M**. Interventions that affect gender bias in hiring: A Systematic Review. Gerontological Society of America Annual Meeting, National Harbor, MD, November, 2008
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69. Robinson E, Salmon A, Paiz-Ramirez D\*, Chu S\*, Gutierrez B\*, Squire K., Millar S, **Carnes M.** (2011). Iterative prototyping in the design of a game to promote diversity in STEMM fields. Workshop presented at the annual Games, Learning & Society (GLS) Conference, Madison, WI, June 15-17.
70. Paiz-Ramirez D\*, Chu S\*, Samson-Samuel C\*, Gutierrez B\*, **Carnes M.** Pathfinder: Developing prototypes towards an engaging game to reduce implicit bias. In: Martin C, Ochsner A, Squire K (Eds), Prod 8<sup>th</sup> Annual Games+Learning+Society (GLS) Conference, Pittsburgh, PA, June, 2012.
71. Paiz-Ramirez D\*, Chu S\*, Gutierrez B\*, Samson-Samuel C\*, Karczewski J, Wiens A, Smith J, Pempe S, Squire K, **Carnes M.** *Fair Play* Game, an interactive video game to use perspective-taking as a way to reduce race bias, was presented the People's Choice Award in the game exhibition at the Meaningful Play Conference, Michigan State U, MI, October 18, 2012.
72. Kolehmainen C\*, Brennan\* M., Filut\* A., Isaac C\*, **Carnes M.** Gender and Leadership in Cardiopulmonary Resuscitation. Abstract at Society of General Internal Medicine Annual Meeting (oral). Denver, CO. April 2013. Received the Mack Lipkin Sr - Associate Member Scientific presentation Award.
73. Kolehmainen C., Stahr A., Kaatz A., Brennan M., Vogleman B., Cook J., **Carnes M.** Prevalence of PTSD Symptoms in Internal Medicine Residents Who Perform Codes. Abstract at Annual Congress of Women's Health (poster). Washington, D.C., April 2014.
74. Fine E, Sheridan J, **Carnes M.** Breaking the Bias Habit®: A Workshop to Promote Racial Diversity in STEMM Careers. Understanding Interventions to Broaden Participation in the Biomedical and Behavioral Scientific Workforce Conference, Philadelphia, PA, January 27, 2016.
75. Kolehmainen C, Stahr A, **Carnes M.** A Workshop to Reduce Implicit Race and Gender Bias for Residents An Interactive Workshop to Reduce Implicit Bias in Internal Medicine Residents. Workshop presentation at the Society of General Internal Medicine annual meeting. May 14, 2016.
76. Filut A, Alvarez M, **Carnes M.** Bias toward non-White primary care physicians from their White patients: A systematic review. Understanding Interventions to Broaden Participation in the Scientific Workforce Conference. Baltimore, MD, February 3, 2018.

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 Acad Med. 2023 May 23. doi: 10.1097/ACM.0000000000005271. Online ahead of print.  
 PMID: 37220392
3. [Pilot test of a multicomponent implementation strategy for equity in advanced heart failure allocation.](#)  
 Breathett K, Yee RH, Pool N, Hebdon MC, Knapp SM, Calhoun E, Sweitzer NK, Carnes M.  
 Am J Transplant. 2023 Jun;23(6):805-814. doi: 10.1016/j.ajt.2023.03.005.  
 Epub 2023 Mar 15.  
 PMID: 36931436
4. [Group Dynamics and Allocation of Advanced Heart Failure Therapies-Heart Transplants and Ventricular Assist Devices-By Gender, Racial, and Ethnic Group.](#)  
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